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I

MEMOIRS

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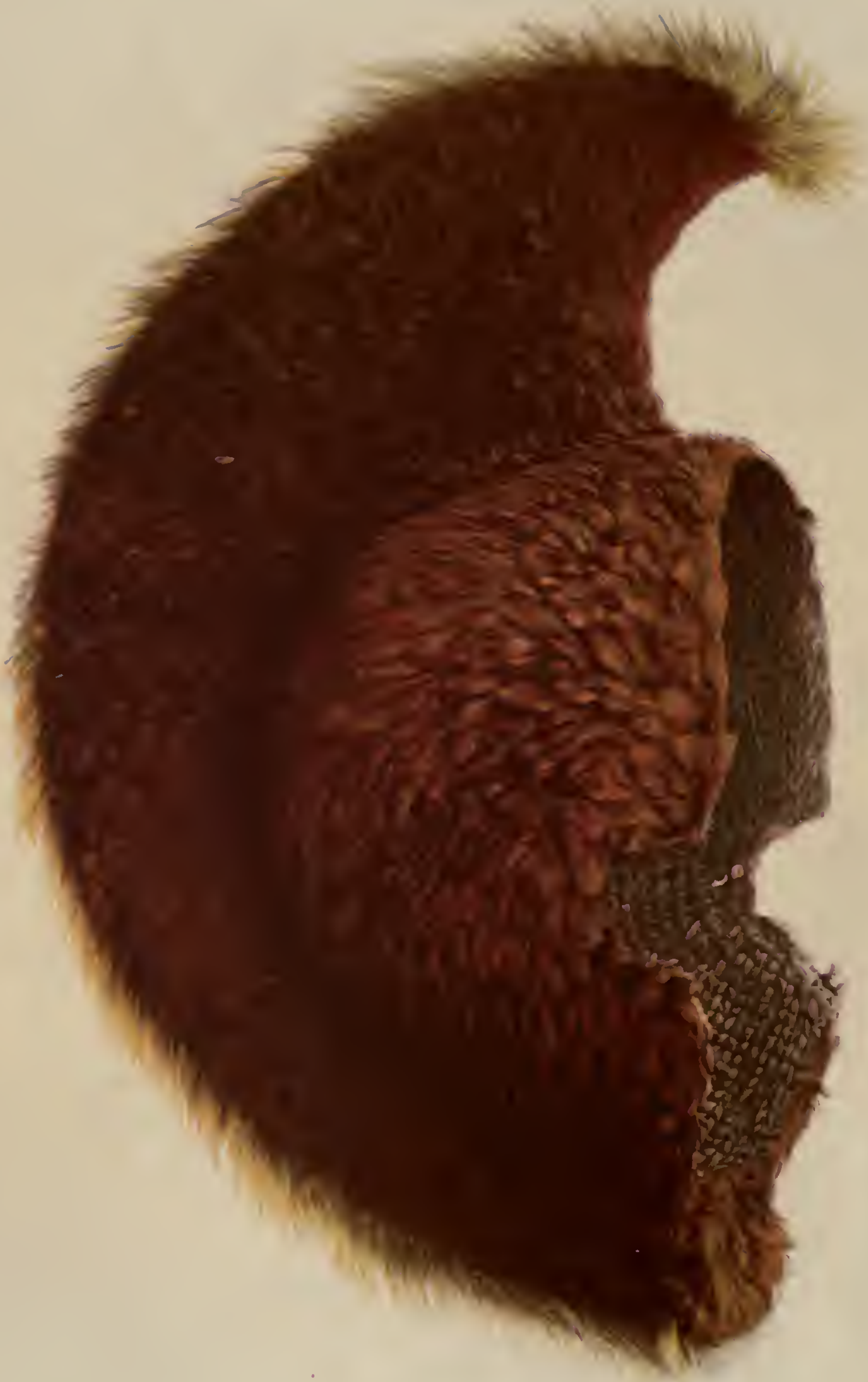

HELMET OF KAUMUALII, KING OF KAUAI.

XVII

HAWAIIAN FEATHER WORK

BY

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EXPLANATION OF THE PLATES.

I. Helmet of Kaumualii, King of Kauai. Printed in colors by Löwy, of Vienna, from a negative by the author.

II. Tahitian gorget or portion of a dress of ceremony. From a photograph sent from Sydney by R. Etheridge, Jr., Esq.

III. Hawaiian with cloak (No. 5) and helmet (No. 2). Photographed by the Director.

IV. Small kahili in the Bishop Museum. Photographed by the author.

V. Tropic bird (No. 7463) and young (No. 7464). Photographed by the Director from mounted specimens in the Bishop Museum.

VI. Feather mats in the British Museum. Photographed by Mr. Henry Oldland for this use.

VII. Helmets in the Spanish National Museum at Madrid. From a lithographed plate kindly furnished by Stewart Culin, Esq., of Philadelphia.

VIII. Boki and Liliha. From the colored lithograph of a painting by John Hayter, published in September, 1824. The copy in the Picture Gallery of the Bishop Museum was given to Queen Emma in 1885 by the Bishop of Rochester. I do not know where the original painting is. Boki, who was Governor of Oahu, wears a feather cloak and helmet. Liliha wears a *lei* of feathers, a *niho palaoa* of human hair about her neck, and the *pa'u* or usual female dress of kapa.

IX. Network used in feather cloaks. The upper figure shows three grades of oloná net, the middle one a long *malo;* the lower figure shows the back of a cloak where, from the looseness of the netting, the feathers have worked through.

X. Cloak of Kiwalaó (No. 2); in modern times styled the "Queen's cloak."

XI. Network of the cloak of Kiwalaó to show the piecing.

XII. Ahuula in the Boston Art Museum (Nos. 58 and 59).

XIII. Cloaks in the Museum of Her Majesty Victoria at Windsor Castle (Nos. 19 and 20). Photographed by Russell & Co.

XIV. Capes in Her Majesty's collection at Windsor Castle (Nos. *a*=21, *b*=87, *c*=86, *d*=85). Photographed by Russell & Co.

XV. Cape in the Bishop Museum (No. 7). Printed in colors by Löwy, of Vienna, from a negative by the Director. The central crescent should be black instead of red.

HAWAIIAN FEATHER WORK.

An Essay on ancient Hawaiian Feather decoration, with a List of the more important remains. By **William T. Brigham, A.M.,** *Director of the Bernice Pauahi Bishop Museum.*

THE love of personal decoration appears very early in the history of the human race. When the fierce struggle for existence and the pursuit of food and shelter allowed time for the consideration of family, the keen hunters must have learned many a lesson from the beasts of the field and forest,—not less from the birds of the air, of the processes of Nature which Mr. Darwin has called *sexual selection*. That any savage ever reasons out these processes cannot be believed, but the sharp eye trained in daily hunts could not be blind to the patent fact that so many birds have plumage evidently intended for attractive decoration, and that it answers this purpose. Savage man at first put on the adornments in which he saw the male of so many birds and beasts was resplendent, and not until many ages after was the woman allowed to appropriate to her own use what in early tribal life was the exclusive property of the male.

The lion's mane, the tiger's skin, the eagle's feather were man's earliest adornment, and it is not improbable that woman in humble emulation of her lord made for herself clusters and bands of flowers or fruits, while the dwellers on the ocean shores soon took the sea-shells cast on the sandy beach.

The warrior of the far North has the eagle and hawk from which to borrow, and the ancient war dress of a Mandan chief was decorated with spoil of these and other birds; but in the warmer regions of the earth, where Nature puts forth all her powers, and birds and insects vie in coloring with the most brilliant flowers, uncivilized man has wantoned in the prodigality and fashioned for himself a gorgeous decoration taken from the captives of his bow, net, or blow-gun.

India still, through all the years of her changing civilization, has preserved the traces of early work in bird feathers in the superb *punkas* where the showy feathers of the peacock and pheasant have replaced the smaller and more beautiful feathers of earlier days. The rock-cut temples record on the effigies of gods and heroes that line the walls or cluster about the columns the use of feather decoration both in civil and martial guise; a tale of very remote times. Eastward through the Siamese peninsula, northward through China, the use of feather decoration extended, and in the latter empire, where are seen in the glimpses we obtain of their remote history, so many germs of what we fondly consider our own inventions, feather mosaics are even at the present day made in abundance. I have seen in China the simple process of cementing the bright-colored feathers to metal surfaces in a form of jewelry most popular with the middle classes.

It was in the midst of the American continent that feather work in ancient times reached its best estate. In Brazil along the banks of the Amazon, in Venezuela on the Orinoco, where it is difficult to decide whether birds outnumber the flowers or the flowers are brighter in color than the birds that fly among them, the strings and plumes of bright feathers were not merely decorations: they were, and are, often symbols of chieftainship, and feather sceptres are found in most large museums of Ethnology, especially in Rome, Vienna and Berlin.

In Central America the wonderful monoliths buried in the forests of Guatemala and Honduras bear the feather plumes of Quetzalcoatl, and at Quirigna I have seen these plumes sculptured with rare fidelity. The Maya picture writings that escaped the destroying hand of the bigoted Spanish priests, show feather standards, head-dresses and other ornaments, but when we follow the Conquistadores northward through many a league of unbroken forest, we come in Mexico to the royal domain of the "*Ars plumaria*." Here feather work was most admirable at the time of the Conquest and we have still preserved the grand tiara of Montezuma and a superb fan of the same period in the royal Museum at Vienna. These although differing from the class of work we are at present to consider, deserve a passing notice for their wonderful beauty not only of material but of artistic arrangement as well. Baron Ferdinand von Hochstetter has well described the first[1], and Dr. Franz Heger[2] the second. The plumes of the Quetzal (*Pharomacrus mocinno*) and the vivid turquoise blue of the Xiuhtototl (*Cotinga cincta* or *cœrulea*) are prominent among charming spoils of less known birds. The Ara (*Psittacus macao*) furnished brilliant plumage as do scores of other parrots, and the Mexican of today continues the pretty art bequeathed him by remote ancestors.

Whichever way then the ancient inhabitants of the Polynesian groups entered the Pacific Ocean they must have brought some knowledge of feather decoration. Central Asia has now little enough of this work, but the southern and eastern shores of Asia furnished and still furnish abundant illustration. New Guinea, the halting place for the east-bound, has among others the feathers of the Birds of Paradise and the helmets and diadems are no mean objects among the manufactures of a remarkably decorative people. If the immigrants came from the American shore and journeyed with the "Trades" they had no inferior preceptor in the people of Greater Mexico.

On the comparatively barren islands the new comers found few birds of brilliant plumage. Two shades of yellow, two of red, a green, black and white exhausted the

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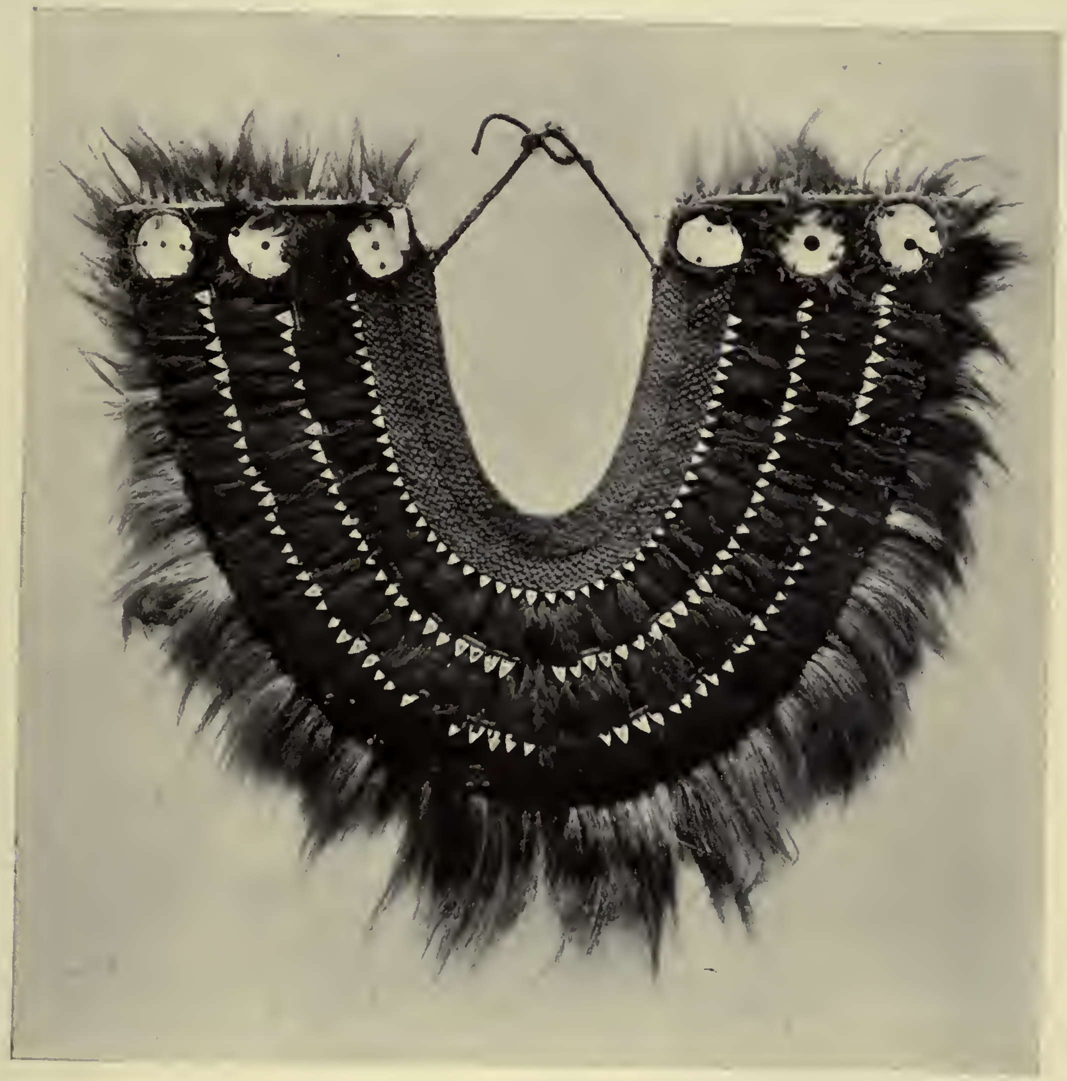
[1] *Ueber mexicanische Reliquien aus der Zeit Montezuma's in der k. k. Ambraser Sammlung in den Denkschriften der philosophisch-historischen Classe der kaiserlich Akademie der Wissenschaften in Wien.* Bd. XXXV. [1884.]

[2] *Altmexicanische Reliquien aus dem Schlosse Ambras in Tirol. Annalen des k. k. naturhistorischen Hofmuseums.* Wien, 1895.

2a



TAHITIAN GORGET.

palette, for the forests were not extensive, nor fruits abundant as in the East Indies or in Mexico.

In Viti the red feathers of the *Lorius solitarius* and in Samoa those of the *Coryphilus fringillaceus* were used to decorate choice mats, and feathers of the former were much sought in Tonga. In the Society Islands stiff gorgets were made of feathers and shark teeth (Pl. II.) and ceremonial dresses or masks of pearl shell and feathers one of which is still preserved in the British Museum and another, less perfect, in Florence.

All these uses of feathers in a permanent form are crude and primitive: all yield to the beautiful and far more durable work of the Hawaiians which it is the object of this essay to illustrate. Hawaiian feather work seen in its remains which have come down to us consists, first, in *Leis* or strings of feathers worn in the hair, or, in later times, about the neck; *Kahilis* or plumes of feathers used as royal insignia; *Ahuula* cloaks or capes worn on state occasions by chiefs and nobility; *Mahiole* or helmets designed for protection as well as ornament; images of the god *Kukailimoku* the chosen war-god of Kamehameha I.; and finally a few other things, as a model of a temple oracle given to Captain Cook, and certain mat-like objects now in the British Museum, of which the probable use will be discussed in order.

The birds which supplied the feathers, at least the choicer yellow, red and green, were inhabitants of the mountain regions into which as the abode of evil spirits the Hawaiian did not like to go. His home was on the shore where the fish were at hand, or in the well-watered valleys where he could grow his kalo (*Caladium esculentum*). Hence a caste arose of hardy venturesome men, the bird-hunters,—*poe hahai manu*,—who endured cold and privations in their hunt for the precious feathers which were indeed the gold currency in which tribute might be paid or by which coveted goods might be obtained. The old Hawaiian was a close observer of nature. Having neither books nor the modern curse of newspapers, his memory was strengthened and his eye sharpened. He had a name for every tree and plant and not less for every bird. It is true that he did not always conjoin the two sexes when they, as is not infrequently the case, differ greatly in coloration; but ornithologists of education have failed in the same way. The hunters knew well enough the haunts of the birds they sought and the seasons when the plumage was at its best. They knew the habits of the birds, their food and other matters that might facilitate their quest. For example, they recognized the curiosity of the birds and planted strange trees in the open places in the forests, and in these new trees placed the sticks smeared with bird-lime which would entangle the prying birds. Bows and arrows would have been of no avail, if they had possessed them, for the rarer birds were seldom killed but captured alive and when the few feathers desired were plucked, released to renew their plumage at the next moulting. When bird-lime made of the viscid juice of the "papala" (*Pisonia umbellifera*) could be obtained it was preferred, although other kinds were known and snares and throwing nets were frequently used. The common sorts were often killed and eaten, and the *oo* could hardly have survived the loss of nearly its entire plumage.

It will be well to look at the description the early voyagers give of this feather work at a time when it was in perfection, bearing in mind that in fifty years from the earliest account the making of feather cloaks had practically ceased, although the construction of kahilis and the plaiting of leis continues to the present day. These latter works, however, require no especial skill and draw upon very miscellaneous material.

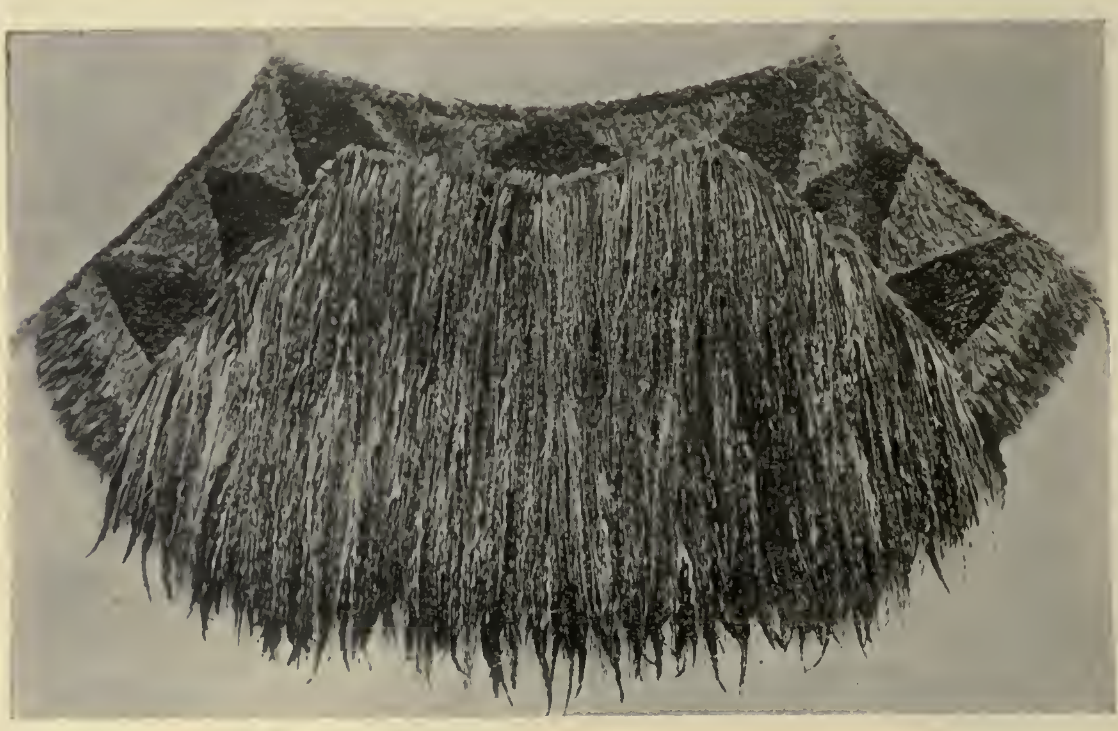


FIG. I. COOK'S CAPE: NOW IN AUSTRALIAN MUSEUM.

When Cook anchored off Waimea, Kauai, in 1778, on his first discovery of the Hawaiian Group, he and his officers at once noticed the feather robes and helmets, and the artist Wäber [not Webber] in the capital drawing made of the scene on shore delineates a chief wearing the mahiole and ahuula. The account is as follows:

> "Amongst the articles which they brought to barter this day [Jan. 21, 1778] we could not help taking notice of a particular sort of cloak and cap, which, even in countries where dress is more particularly attended to, might be reckoned elegant. The first are nearly of the size and shape of the short cloaks worn by the women in England, and by the men of Spain, reaching to the middle of the back and tied loosely before. The ground of them is a net-work, upon which the most beautiful red and yellow feathers are so closely fixed, that the surface might be compared to the thickest and richest velvet, which they resemble, both as to feel and glossy appearance.
>
> "The manner of varying the mixture is very different, some having triangular spaces of red and yellow alternately; others a kind of crescent, and some that were entirely red, had a yellow border which made them appear, at some distance, exactly like a scarlet cloak edged with gold lace. The brilliant colours of the feathers, in those that happened to be new, added not a little to their fine

appearance, and we found that they were in high estimation with their owners, for they would not, at first part with one of them for anything we offered, asking no less a price than a musket. However, some were afterward purchased for very large nails. Some of them as were of the best sort, were scarce, and it would seem that they are only used on the occasion of some particular ceremony or diversion, for the people who had them always made some gesticulations which we had seen used before by those who sung.

"The cap is made almost exactly like a helmet, with the middle part, or crest, sometimes of a hand's breadth; and it fits very close upon the head having notches to admit the ears. It is a frame of twigs and osiers, covered with a net-work, into which are wrought feathers, in the same manner as upon the cloaks, though rather closer and less diversified; the greater part being red with some black, yellow or green stripes on the sides following the curve direction of the crest. These probably complete the dress with the cloaks, for the natives sometimes appeared in both together.

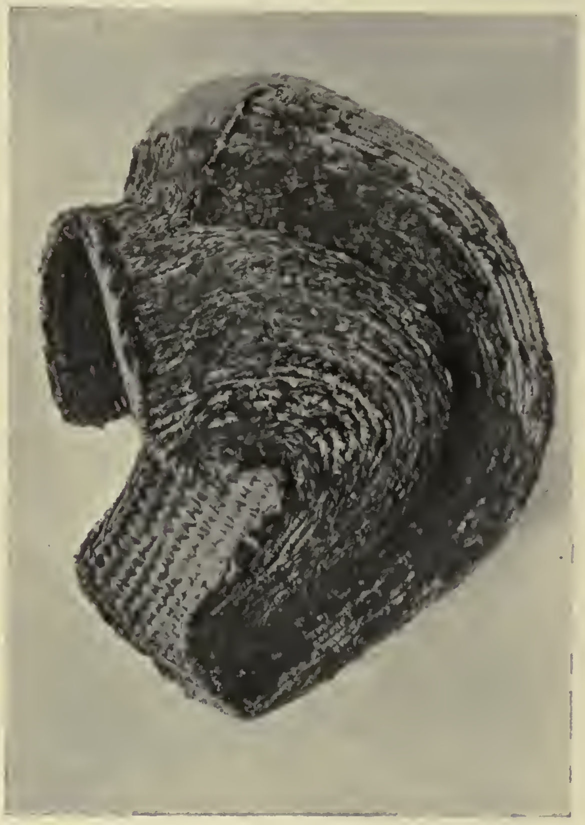


FIG. 2. HELMET TAKEN TO ENGLAND BY VANCOUVER: NOW IN THE BISHOP MUSEUM.

"We were at a loss to guess from whence they could get such a quantity of these beautiful feathers; but were soon informed as to one sort for they afterward brought great numbers of skins of small red birds [*iiwi*] for sale, which were often tied up in bunches of twenty or more, or had a small wooden skewer run through their nostrils. At the first those that were brought consisted only of the skin from behind the nostrils forward, but we afterward got many with the hind part including the tail and feet The first however struck us at once with the origin of the fable formerly adopted, of the birds of paradise (*Paradisea apoda*) wanting legs; and sufficiently explained that circumstance. Probably the people of the islands east of the Moluccas, from whence the skins of the birds of paradise are brought, cut off their feet, for the very reason assigned by the people of Atooi [Kauai] for the like practice, which was, that they hereby can preserve them with greater ease, without losing any part of which they reckon valuable. The red bird of our island was judged by Mr. Anderson to be a species of merops, about the size of a sparrow; of a beautiful scarlet colour, with a black tail and wings; and an arched bill twice the length of the head, which with the feet was also a beautiful reddish colour. The contents of the head were taken out, as in the birds of paradise, but it did not appear that they used any other method to preserve them than by simple drying; for the skins, though moist, had neither taste nor smell that could give room to suspect the use of anti-putrescent substances.[3]

"They have another [dress] appropriated to their Chiefs, and used on ceremonious occasions, consisting of a feathered cloak and helmet, which in point of beauty and magnificence, is perhaps nearly equal to that of any nation in the world. As this dress has been already described with great accuracy and minuteness, I have only to add that these cloaks are made of different length in proportion to the rank of the wearer, some of them reaching no lower than the middle, others trailing on the ground. The inferior chiefs have also a short cloak, resembling the former, made of the long tail feathers of the cock, the tropic and man-of-war birds, with a broad border of the small red and yellow feathers, and a collar of the same. Others again are made of feathers entirely white with variegated borders. The helmet has a strong lining of wicker-work, capable of breaking the blow of any war-like instrument and seems evidently designed for that purpose. Fig. 2.

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[3] *Cook's Voyages.* Quarto Ed., 1784, II., p. 206.

"These feathered dresses seemed to be exceedingly scarce, appropriated to persons of the highest rank and worn by the men only. During the whole time we lay in Karakakooa Bay [Kealakeakua], we never saw them used but on three occasions: in the curious ceremony of Terreeoboo's [Kalaniopuu] first visit to the ships; by some chiefs who were seen among the crowd on shore when Captain Cook was killed; and afterward, when Eappo [?] brought his bones to us.

"The exact resemblance between this habit and the cloak and helmet formerly worn by the Spaniards was too striking not to excite our curiosity to inquire whether there were any probable grounds for supposing it to have been borrowed from them. After exerting every means in our power of obtaining information on the subject, we found they had no immediate knowledge of any other nation whatever; nor any tradition remaining among them of these islands having been ever visited before by such ships as ours. But notwithstanding the result of these inquiries, the uncommon form of this habit appears to me a sufficient proof of its European origin, especially when added to another circumstance, that it is a singular deviation from the general resemblance in dress which prevails amongst all the branches of this tribe dispersed through the South Sea. We were driven indeed by this conclusion to a supposition of the shipwreck of some Buccaneer, or Spanish ship, in the neighborhood of these islands. But when it is recollected that the course of the Spanish trade from Acapulco to the Manilas is but a few degrees to the Southward of the Sandwich Islands in their passage out, and to the Northward on their return, this supposition will not appear in the least improbable."[4]

To Captain King's account must be added that of the surgeon of the fleet, William Ellis, who was both a ready writer and a good draughtsman. His relation of the last voyage of Cook, now a rare book, adds much to the information given in the official account.

"The principal ornaments of the men are the feather caps and cloaks; some of the latter reach down to their heels, and have a most magnificent appearance. They are made for the most part of red and yellow feathers, which are tied upon fine net work; the caps are composed of the same kind of feathers which are sometimes intermixed with black; they are secured upon a kind of basket work made in the form of a helmet. Both caps and cloaks are made of various patterns and sizes. The cloaks are not all composed of the same kind of feathers, but are sometimes varied with the long tail feathers of the cock, with a border of yellow or red, and sometimes with those of the tropick bird. Both caps and cloaks, however, are only to be seen in the possession of the principal people. They have also a kind of fly-flap, made of a bunch of feathers fixed to the end of a thin piece of smooth and polished wood: they are generally made of the tail feathers of the cock, but the better sort of people have them of the tropick bird's feathers, or those belonging to a black and yellow bird called mo-ho [Oo]. The handle is very frequently made of one of the bones of the arm or leg of those whom they have killed in battle, curiously inlaid with tortoise shell: these they deem very valuable, and will not part with them under a great price. This ornament is common to the superiors of both sexes.

"The women too have their share in the ornamental way: that which they value most is the erai [*lei*]. This is a kind of ruff or necklace made of red, green, black, and yellow feathers, curiously put together, and in most elegant patterns, which really do honor to the fancy of the ladies, whose business it is to make them. They never think themselves dressed without one or two of these round their necks, and those who can afford it wear many."[5]

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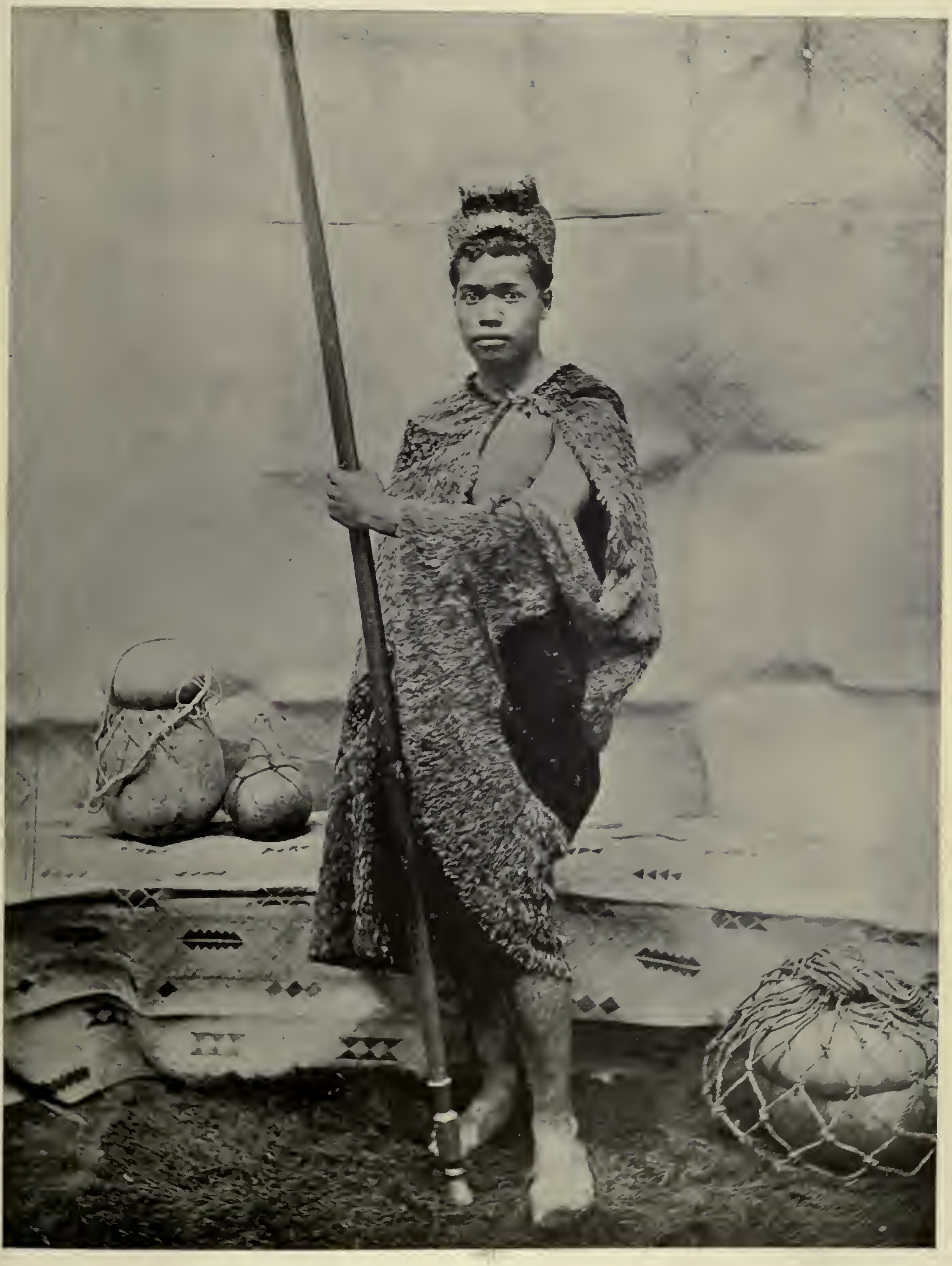
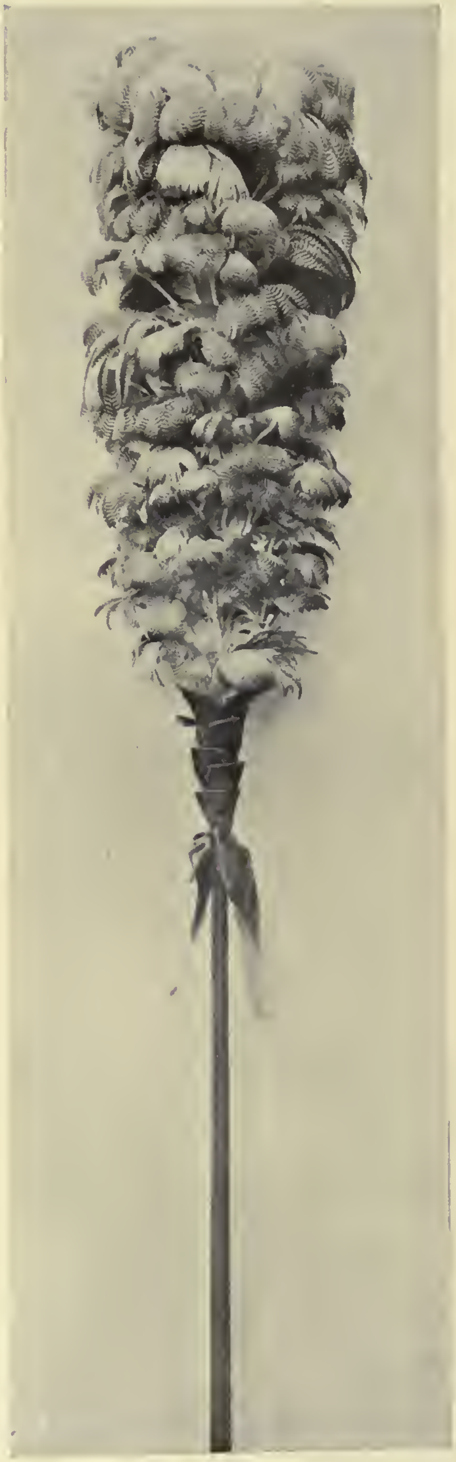
[4] Journal of Captain King; *Cook's Voyages*, III., p. 138. The supposition that the Spaniards had preceded them was indeed correct. Cook had doubtless read Anson's Voyage, which was published the year he sailed from England, and in which was a copy of the Spanish chart captured on the galleon June 20, 1743, on the voyage from Acapulco to Manila. On this chart are laid down a group "Las Mesas" in nearly the latitude of the Hawaiian Islands, though some fifteen degrees out of the correct longitude, not an unusual error at that time. In November, 1527, shipwrecked Spaniards arrived at Keei, near Kealakeakua, Hawaii, in the reign of Kealiiokaloa. In 1555 Juan Gaetano discovered these islands when sailing from New Spain to the Moluccas.

[5] *An authentic narrative of a voyage performed by Captain Cook and Captain Clerke, in his majesty's ships Resolution and Discovery during the years 1776, 1777, 1778, 1779 and 1780; in search of a north-west passage between the continents of Asia and America. Including a faithful account of all their discoveries, and the unfortunate death of Captain Cook.* By W. Ellis, assistant surgeon to both vessels London, 1782. Vol. II., p. 155.



HAWAIIAN WITH CLOAK (5) AND HELMET (2).

6 B.



SMALL KAHILI.

In the voyages of Captains Portlock and Dixon in 1786 we read:

"But the most beautiful ornament wore by the women is a necklace made from the variegated feathers of the humming bird which are fixed on strings so regular and even as to have a surface equally smooth as velvet; and the rich colours of the feathers give it an appearance equally rich and elegant.

"The caps and cloaks wore by the men are still superior in beauty and elegance. The cloaks are in general about the size of those wore by the Spaniards; the ground is network and the feathers are sewed on in alternate squares or triangular forms of red and yellow, which have a most brilliant appearance. The ground of the caps is wicker work, in the form of a helmet; the elevated part from the forehead to the hind part of the neck, is about a hand's breadth and generally covered with yellow feathers, the sides of the cap with red. This cap, together with the cloak, has an appearance equally splendid, if not superior to any scarlet and gold whatever.

"These truly elegant ornaments are scarce, and only possessed by Chiefs of the highest rank, who wear them on extraordinary occasions. There are cloaks of an inferior kind, which have only a narrow border of red and yellow feathers, the rest being covered with feathers of the tropic and man-of-war bird."[6]

Vancouver returning to Kealakeakua Bay in 1792 met Kamehameha I. and he describes the dress of the young king as follows:

"The largest canoe was rowed by eighteen paddles on each side; in this was his Hawaiian majesty, dressed in a printed linen gown, that Captain Cook had given to Kalaniopuu; and the most elegant feather cloak I had yet seen, composed principally of beautiful bright yellow feathers and reaching from his shoulders to the ground on which it trailed. On his head he wore a very handsome helmet, and made altogether a very handsome appearance."[7]

During that visit the king presented Vancouver with four very handsome feathered helmets[8] (one of these, Fig. 2, is now in the Bishop Museum, No. 322); and later, when coming to see his good friend,—

"Kamehameha conceiving this might be his last visit, presented me with a handsome cloak formed of red and yellow feathers, with a small collection of other native curiosities; and at the same time delivered into my charge the superb cloak that he had worn on his formal visit on our arrival. This cloak was very neatly made of yellow feathers; after he had displayed its beauty and had shewn me the two holes made in different parts of it by the enemy's spears the first day he wore it, in his last battle for the sovereignty of this island, he very carefully folded it up, and desired that on my arrival in England, I would present it in his name to H. M. King George;[9] and as it had never been worn by any person but himself, he strictly enjoined me not to permit any person whatever to throw it over their shoulders, saying it was the most valuable in the island of Hawaii, and for that reason he had sent it to so great a monarch, and so good a friend, as he considered the King of England.

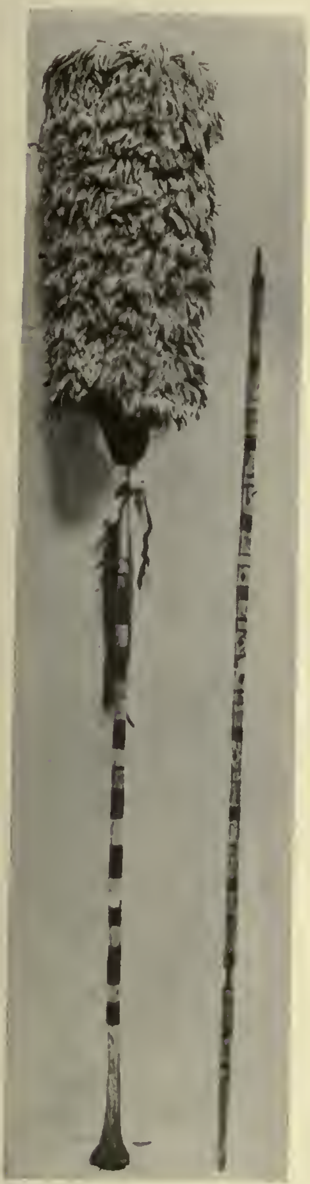


FIG. 3. BONE HANDLES OF KAHILIS: B. P. B. M.

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[6] *Voyage round the world, but more particularly to the Northwest coast of America, performed in 1785–88.* London, 1789. 4to, p. 271.

[7] *A voyage of discovery to the North Pacific Ocean and round the world, undertaken by his Majesty's command, principally with a view to ascertain the existence of any navigable communication between the North Pacific and North Atlantic Oceans, and performed in the years 1790–95, under the command of Captain George Vancouver.* London, 1798. Vol. II., p. 126.

[8] *Loc. cit.*, p. 127. These are now, with the exception mentioned, in the British Museum.

[9] *Loc. cit.*, p. 159. This cloak is supposed to be one of those now at Windsor Castle. It might be identified by the holes made by

"This donation I am well persuaded was directed by his own grateful heart, without having received the least hint or advice from any person whatever, and was the effect of principles, highly honorable to more civilized minds. The cloak I received and gave him the most positive assurance of acting agreeably with his directions."

I have given the extracts from these early voyagers in full for it is the only authentic information that we have from foreigners: that from native sources is very meagre and indefinite. Even in recent times we can learn nothing very exactly about these ancient cloaks: for example when King Lunalilo was buried, his father Kanaina insisted upon putting the fine feather cloak which had been laid over the remains, into the coffin with him. This was in 1874, and hundreds must have seen this cloak as the royal corpse was exposed to the view of the people; I have questioned many most intelligent foreigners and natives with the result that one saw the cloak and only remembers that it was yellow and large: another says it was not all yellow but had some other color, but whether red or black he cannot say: another is sure it had some pattern but whether crescents or triangles could not say: still another is under the impression that the cloak was entirely red! The most trustworthy testimony places a green crescent in the middle. Little of a more definite nature is to be gathered from native song and tradition, although both cloaks and kahilis are mentioned and the royal birds play a conspicuous part in many a fine old *mele*. Then the absurd stories repeated in almost every new book written about these islands, although false, seem immortal. How often is the statement repeated in book and on label that the bird of

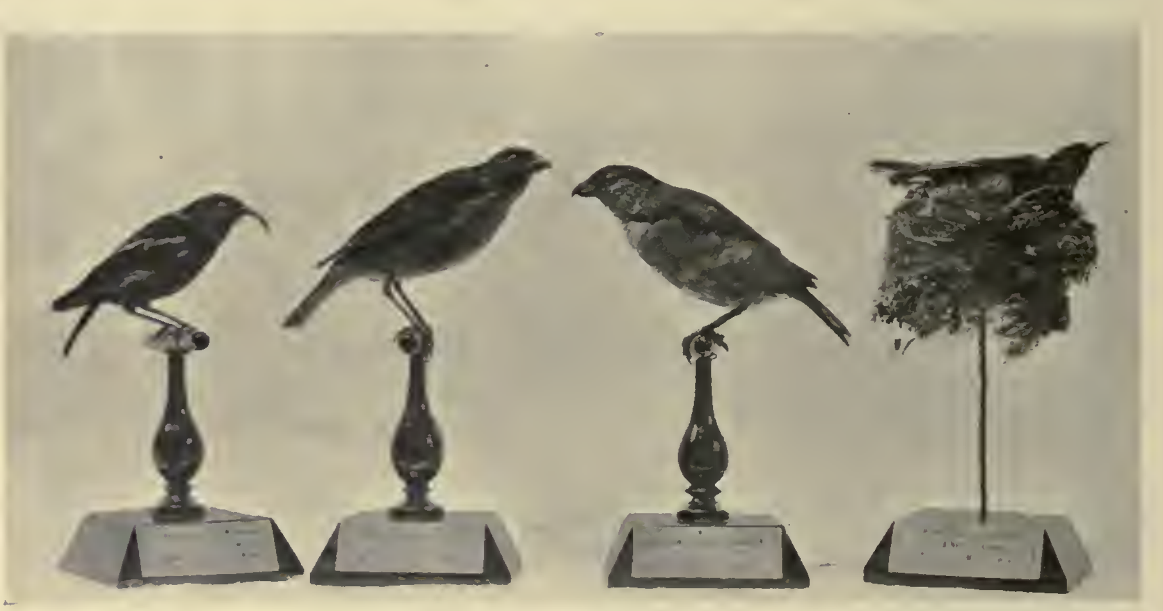

FIG. 4. IIWI, OU AND APAPANE: SPECIMENS IN THE BISHOP MUSEUM.

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the spear, but at the time of my last visit to England the Windsor cloaks had "been sent to the furrier for repairs." Since my visit renewed search has been made for this cloak at Windsor, but without success. Other cloaks and capes were found and are now in the private museum in the castle. All of these Her Majesty has graciously allowed me to have photographed and they will be described in due order. The cloak Vancouver so carefully carried to his sovereign has probably perished.

yellow feathers has but two of the precious decorations,—the fact being that the Oo has in each axil a tuft of from fifteen to twenty feathers, and the Mamo has quite as many in the dorso-caudal region. But it is time lost to repeat the many wanderings from the truth that these mysterious birds have caused, and we may turn at once to a consideration of the birds that furnished the feathers for the old Hawaiians.[10]

BIRDS FURNISHING FEATHERS.

Iiwi.—First the Iiwi (*Vestiaria coccinea*, Reichenbach), Fig. 4, *a*, the bright red bird, found all over the group, today as in former times the most abundant native bird, although, like all other natives disappearing. I have seen it in my garden in Nuuanu Valley about 120 feet above the sea, in fair weather, and it is often driven down to the shore from the mountain ridges, which are its usual haunt, by severe storms. It is a honey-sucker and frequents the arborescent Lobeliaceæ so noticeable a feature of the Hawaiian flora. The adult female is of a darker vermilion than the male, and her feathers are easily mistaken for those of the faded apapane. Total length, 5.75 inches. The breast furnishes the main supply of feathers.

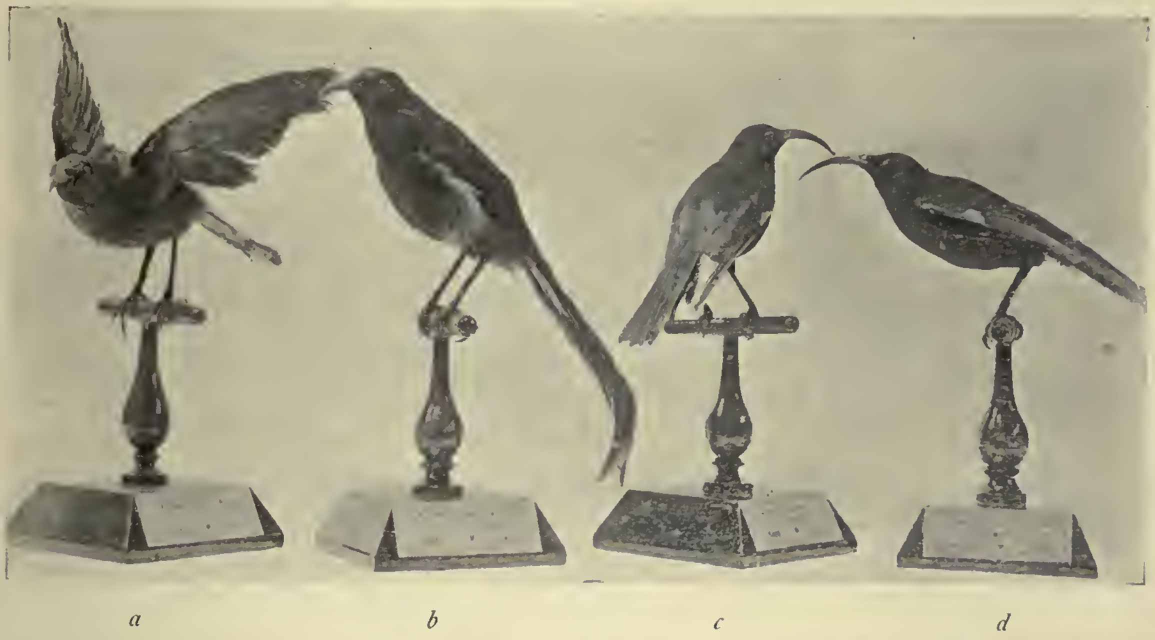

FIG. 5. OO AND MAMO: SPECIMENS IN BISHOP MUSEUM.

That there may be something more definite than the mere terms red, yellow, orange applied to these feathers, I have compared unfaded specimens with the color illustrations given in M. Léon Lefèvre's *Traité des Matières colorantes artificielles*, Paris, 1896, and the fresh feathers of the iiwi correspond to the rouge d'alizarine SX sur soie 25% pâte à 20% given on page 1402 of that great work. When the feather fades it assumes a yellow tone, and the color of these as of the oo and mamo fades quickly in alcohol. Kept in the dark, as the ahuula were most of the time, the tint seems very durable, some old leis and capes showing as bright as the freshly plucked feathers.

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[10] For the measurements and ornithological names I am indebted chiefly to Mr. Scott B. Wilson, whose *Aves Hawaiienses: Birds of the Sandwich Islands* is replete with careful observation and much study. In the case of native names, Mr. Wilson, as most other collectors, has trusted too much to the modern native, who neither remembers nor cares for the ancient lore of the islands, but will not confess his ignorance, passing upon the unsuspecting stranger it may be the name of a fish or flower, if the true name is forgotten.

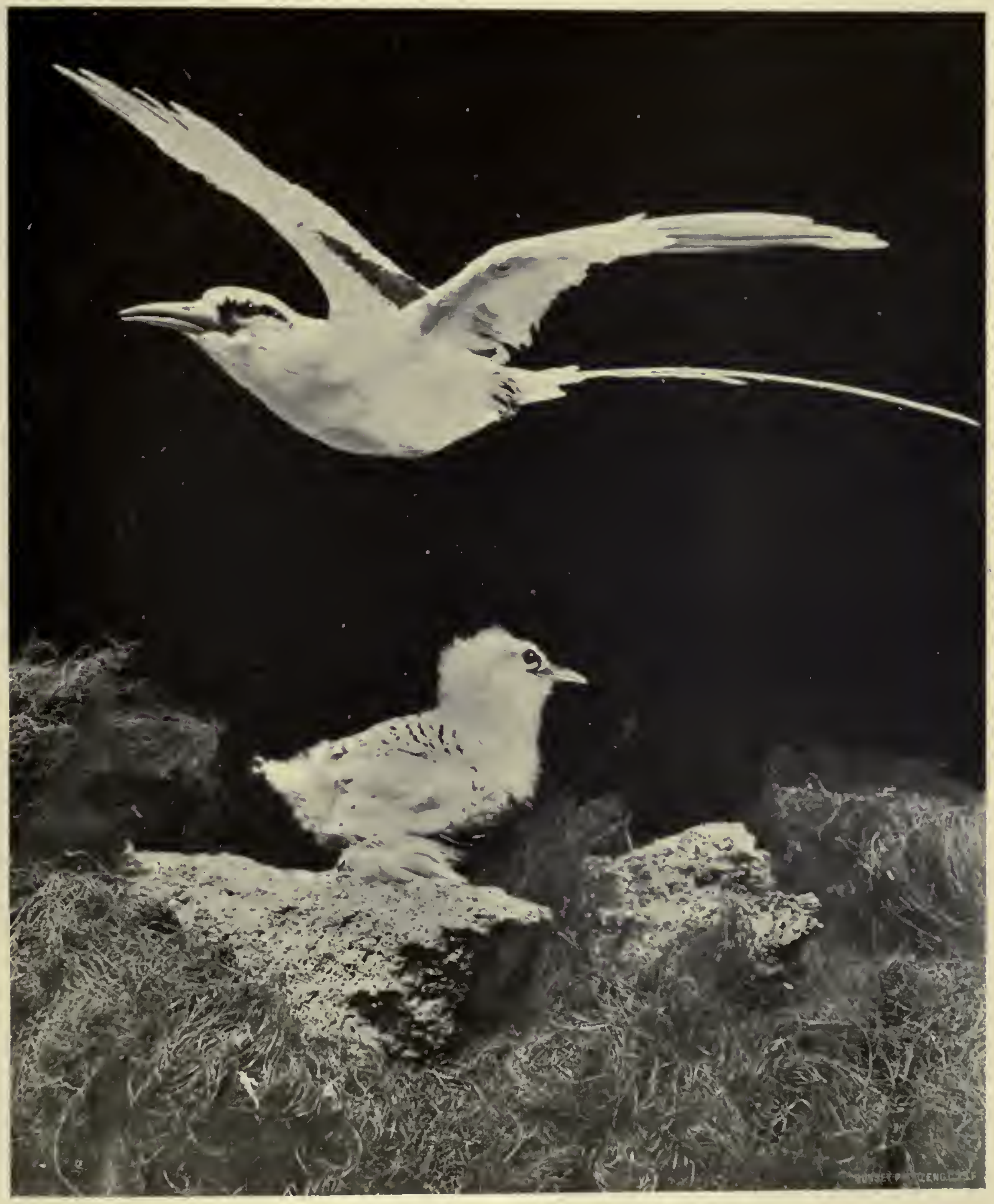
Oo.—Next to this the Oo (*Acrulocercus nobilis*, Wilson), Fig. 5, *a* ♀, *b* ♂, is abundant, but confined to the island of Hawaii. Other species are found on Kauai, Maui and Molokai, but none of them have the bright axillary tufts. Like the iiwi it is a honey-sucker, but I have fed them successfully in captivity on the juice of sugar cane. The general color is a brilliant black which brings the yellow tufts into fine contrast. All the black figures and lines in the feather work are of this plumage, and it was largely used in the grand kahilis. As the bird was a favorite article of food, and as the larder of the hunters in the mountains was poorly stocked, it seldom survived capture, and yet this bird has remained in comparative abundance while the mamo, whose orange feathers alone were taken, has become extinct. The name is onomatopœic, the note closely resembling o-o. Total length of adult male, 12.5 inches; adult female, 9.5 inches. The curled tail which gives the bird its generic name is confined to the male of the *nobilis*. The yellow of the axillary tufts is nearly represented by the citronine sur soie shown on p. 449 of Lefèvre. In mounting these feathers, which are rather thin at the top and black at the base, iiwi short feathers are often added to the base to give a warm tint to the pale yellow and to approximate it to the mamo. This addition is called *pa'u* (waist-cloth).

Ou.—The Ou (*Psittacirostra psittacea*, Temminck), Fig. 4, *b* ♀, *c* ♂, has a range throughout the group, feeding largely on the ripe fruits of the ie-ie (*Freycinetia arborea*, Gaudichaud). The green color varies considerably; only that on the head is brilliant while the body plumage is dull, and was not much used; only three or four capes and as many helmets showing these have survived. Adult, 6.3 inches long. Other greens might have been obtained from the genus *Hemignathus* or *Heterorhynchus*, but this seems to have been rare anciently as well as at present.

Apapane.—The Apapane (*Himatione sanguinea*, Cabanis), Fig. 4, *d* ♀, ranges all over the islands, feeding on honey. Not much used in feather work; the dark crimson feathers being inconspicuous at a distance. The color is crocéine sur laine 2%, p. 461 of Lefèvre, shaded with primuline+β napthol, p. 596. Adult length, 5.25 inches. A fragment of a cape (Cat. No. 40) made largely of these fine feathers is now in Honolulu, and several leis where they appear mixed with other feathers are in this Museum.

Mamo.—The beautiful Mamo (*Drepanis pacifica*, Temminck) is rare in collections, the Bernice Pauahi Bishop Museum having only four specimens, two of those in the Mills collection having been given by Mr. Chas. R. Bishop to Mr. Scott B.

10a



TROPIC BIRD AND YOUNG.

Wilson. It is probably nearly extinct, collectors of late years having failed to find it. In 1890 I saw three in a sandal-wood tree under which I was camping on the slopes of Mauna Hualalai on Hawaii (to which island the species is confined) at an elevation of 7000± feet. The Mills specimens were obtained, so Mr. Mills informed me in 1864, near Olaa in Puna. The Kamehameha cloak in the Bishop Museum (No. 1 of the catalogue given below) is composed wholly of these feathers; so also is a fine lei in the same collection. The bird is about 8 inches long. Fig. 5, *c*, *d*. The general plumage is not of so rich a black as the oo, while the lower part of the body, the rump, thighs, anterior margin of wings and tail coverts are of a rich orange. Among Hawaiian birds the mamo is *facile princeps*. Its name has been applied to all royal war-cloaks very mch as "beaver" has clung to a soft hat no longer made of the fur of the *Castor fiber*. The principal color of the orange feather seems to be represented by the jaune métanile sur laine, 2% shown on p. 446 of Lefèvre's work. To distinguish these feathers when faded from the oo is not always easy, but the orange of the former is separated from the black base by a marked white space, and the tips of the oo feathers are thinner and larger.

Koae.—The Tropic bird (*Phaëthon æthereus*, Bloxam), Boatswain bird, Paille-en-queue, Pylstaart, is shown in Pl. V. with its young. It breeds among the loose rocks of the bird islands or on ledges of almost inaccessible cliffs on Oahu and other inhabited islands, where its white form hovering like a kite in the air against the green *palis* is often seen late in the afternoon. The long tail-feathers of the adult and the mottled plumage of the young were used to some extent in the fabrication of kahilis, but by no means so frequently as the feathers of the next species.

Koae ula.—At present the Red-tailed Tropic bird (*Phaëthon Rubricauda*, Salvin), while found occasionally on Niihau and the outlying islets is abundant on Nihoa and Necker Islands. On the latter island I have pulled the red tail feathers from the sitting bird who did not seem to greatly resent the outrage; perhaps at that season the feathers are more loosely attached, preparatory to moulting. While these two feathers forming the important part, were greatly sought and highly valued, the satiny white of the body plumage was also much in demand for capes, although little of this white work is extant in museums: the only two specimens I have found are at Florence; Nos. 66 and 67 in the List of Ahuula.

Iwa.—The Frigate bird (*Fregata aquila*, Gould), also called the Man-of-war hawk, was hunted for its long black metalic-tinted feathers, both for cloaks and for kahilis. Common in the nesting season on Necker Island. In ancient days fishermen made frequent excursions to Nihoa and Necker Islands. The landing places (only one on each island) were so situated that landing was possible on one or the other island in whatever wind. On the latter island, which is the narrow rim of a ruined crater, are many stone constructions used in worship or in the propitiation of the deities of sea, wind, fishing and hunting, as both fishers and hunters had their peculiar gods, images of which were found there a few years ago broken to fragments.

Pueo.—The Hawaiian owl (*Asia accipitrinus*, Gurney) was worshipped as a god, but Davida Malo says in his so-called Hawaiian Antiquities,—but which is really a compilation of native schoolboys' compositions,—that the feathers were used for kahilis, the bird being caught in snares placed near its burrows.

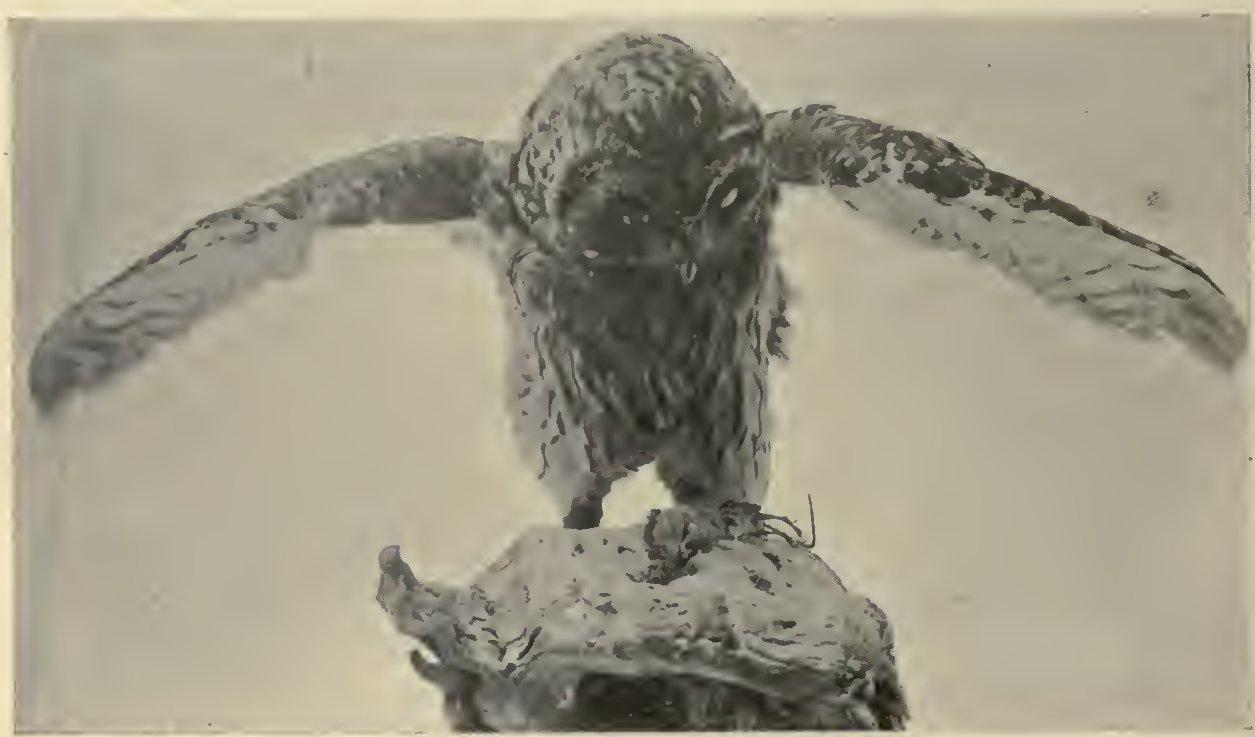


FIG. 6. PUEO, HAWAIIAN OWL.

Alalá.—The Crow (*Corvus tropicus*, Gmelin) is found only in the southwest part of Hawaii. It was caught in snares. I have known one to be knocked down by a stick, caught and kept eighteen months in captivity. The black feathers were used for kahilis and for dressing idols much in the way common in New Guinea.

The feathers of the barnyard fowl and of the gamecock were largely used for common capes or cloaks, as were those of the duck, and in recent times those of the latter were sometimes dyed red or yellow. Kahilis of such dyed feathers are in the Bishop Museum from the collection of Queen Emma.[11] Dyed feathers have been much used for leis and for ahuula as well, so that it is very necessary to examine specimens of feather work with care for this counterfeit. Fortunately both of the precious yellow feathers have black bases not present of course in the dyed specimens. Dr. Serrurier tells (*Aarddrijkskundig Weekblad, 1881*, No. 19) an amusing story of dyed feathers as quoted by Director Schmeltz:[12] "Die Königen der Sandwich Inſeln ſandte einen ſolchen Mantel nach irgend einer Weltauſtellung und lieſſ ihn des groſſen Werthes halben für eine hohe Summe verſichern. Das Cchiff litt Schiffbruch, aber nach einiger Zeit wurde die Ladung aufgafiſcht und der Mantel kam wieder zum Vorſchein, indeſſ von der gelben Farbe der Federn war nichts mehr übrig; der Mantel war gefärbt geweſen." Now even the old natives were aware of the action of salt water on the genuine feathers and took great precaution when carrying their precious robes on canoe voyages. Surely the prolonged saturation of a shipwreck would account for any loss of color. I have, however, soaked both mamo and iiwi feathers in a saturated solution of common salt for six months with but little loss of color. The story, although probably apocryphal, has served its purpose. It is unnecessary to more than mention the leis and capes made in recent times of the feathers of the peacock and pheasant, many of which were in the possession of Kalakaua and his sister; they were poor substitutes for the genuine Hawaiian feathers.

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[11] These dyed feathers are far from permanent in color, and in the past eight years four of these kahilis which were placed outside the cedar cases in the Kahlli room at the Museum have lost much of their color although never exposed to the direct rays of the sun and except on the two exhibition days each week quite in the dark. Two placed within the almost air-tight cases have preserved their color better.

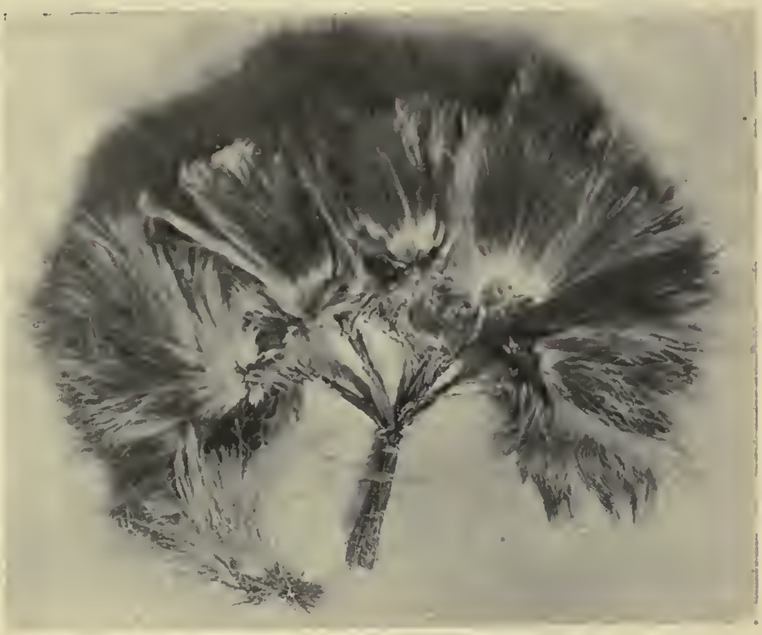

FIG. 7. FEATHERS FROM THE HUNTER.

Besides the method of capturing with bird-lime, nets of light thread and wide mesh were skilfully thrown over the flying bird, and sticks and stones were also resorted to with the larger birds. Peheapueo was a snare used especially for owls. One of the ancient nets for bird-catching is in this Museum (No. 138), and I have succeeded without difficulty in capturing with it the so-called "mina" (*Pastor tristis*) a bird about the size of the oo. This net is of considerable size and the mesh stick would be five inches wide. In whatever way the birds were caught the feathers when plucked were tied to a thin but strong fibre and made up into small parcels as shown in Fig. 7. The hunters often padded the main feather with the small down (pa'u) to make the parcel appear well. The feathers from under the wings were called *ee*, those over the rump *pui*, while the tail feathers were *pupua*.

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[12] *Archives Internationales D'Ethnographie, I.*

The use of feathers as currency was common throughout Polynesia, as shell money was with the Papuans. In New Zealand, while cloaks of large size were made of the feathers of the Kiwi (*Apteryx mantellii*, etc.), the fine black feathers of the Huia (*Heterolocha acutirostris*, Gould) were used in the Polynesian way for barter as well as for cloak making.

FEATHER KAHILIS.

THE name *kahili* is derived from the root verb *hili*, to braid or tie on, as feathers to a stem, or stone adzes to a handle: with the article it becomes *ka-hili*, the plaited thing. The kahili in its greatest development consisted of a pole sometimes twenty feet high, to the upper end of which was attached the *hulu* or cluster of feathers. This was sometimes of great extent; the Rev. C. S. Stewart, who was at the Islands when Lord Byron brought home the bodies of Liholiho and Kamamalu (in 1825), saw poles near thirty feet high with *hulumanu* forming cylinders fifteen to eighteen inches in diameter and twelve to fourteen feet long.[13] The largest in the Bishop Museum is thirty inches in diameter and four feet long. Neither Cook nor Vancouver mention these immense kahilis, for they never saw them, no royal funeral occurring during their stay, and usually the poles were stripped of feathers when occasion passed, and the feathers were preserved in calabashes until again required.

It is probable that a bunch of feathers used as a fly-flap was the primal form of feather work. Flies (*nalo*) were here though not in such abundance as found by early explorers on other islands of the Pacific; but even for this useful purpose the bunch of feathers was no doubt preceded by a bunch of leaves, and the prototype of the kahili seems to have been a stem of that most useful plant the ki (*Cordyline terminalis*, Kunth). Fig. 9, p. 16. On many of the islands of the Pacific a branch of ki was the symbol of peace, and on the Hawaiian Islands it shared in early times with a coconut leaf the representation of high rank. Its utility has survived its symbolism: and the native obtains food and drink from the large saccharine root. At first he made a kind of fermented beer, then taught by vicious whites the Hawaiian distilled this fermenting mass making a smoky whiskey called in the vernacular, from the name of the rude iron still, *okolehao*. The tough leaf is still the favorite wrapper for fish, and I have seen an unclothed and so pocketless native carry a score of oranges, each fruit wrapped neatly in one of the leaves still attached to the stem. These leaves are also acceptable fodder for animals.

Very early the hand plumes became symbols of rank and on all public occasions kahili bearers (*na lawekahili*) attended a chief, or while he ate or slept a *haakui* brushed away with smaller ones all troublesome insects. In public they were tokens; in private fly-flaps. The picture of Nahienaena, sister of Kauikeaouli, shows one in her hand. Fig. 10, p. 17. When oil portraits were introduced those of chiefs often had small kahilis attached to the side of the frame. The small kahilis were easily made and became very common; were used as presents and so fell into the hands of others than the nobility, thus losing much of their meaning. The late royal family, however, retained them to the end of the monarchy, and royal personages had them at their side at feasts or public receptions.

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[13] *Private Journal of a voyage to the Pacific Ocean and residence at the Sandwich Islands, in the years 1822–25.* By C. S. Stewart. New York, 1828. p. 10. See extract below.

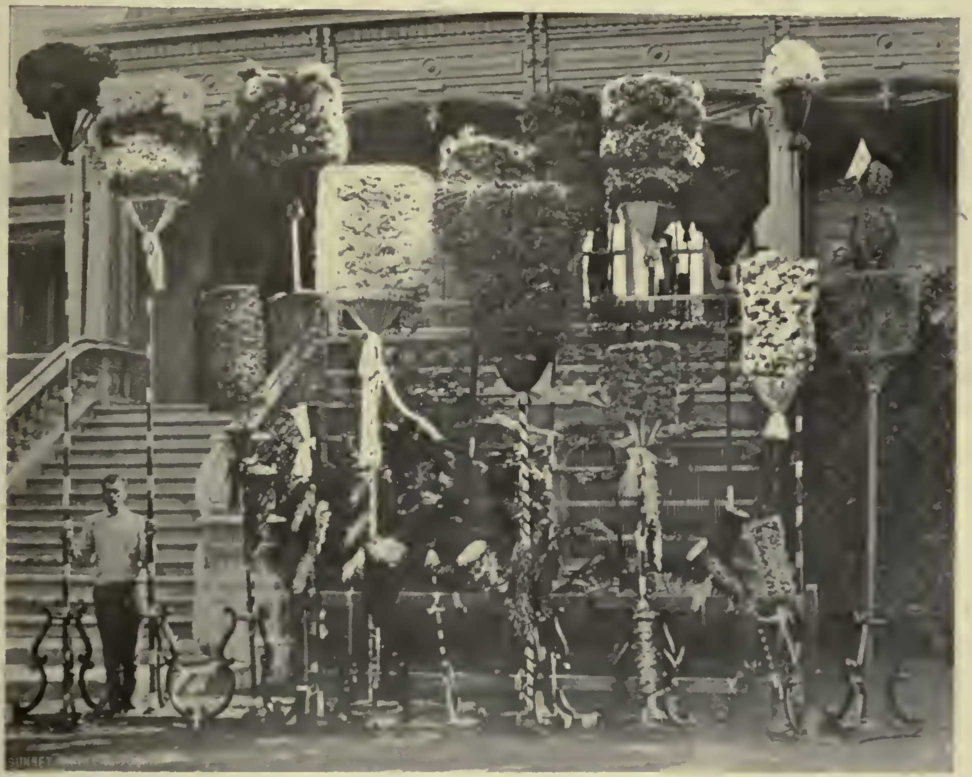

FIG. 8. KAHILIS.

Of these small kahilis the Bishop Museum has four score, and examples are found in most museums. The large kahilis used only on solemn occasions are now limited in number, all the important historic ones are in this Museum and no more will ever legitimately be made. I know of none in any foreign museum.

The pole, at first a mere support or stem, became from the force of circumstances the impersonation of the whole kahili in this way: a kahili was made for a chief, was named, and, when the occasion for its use had passed, its feathers were taken off and stored away; the form was dissolved and only the name remained to the pole which might when the next need arose be again clothed with the same or other feathers, and in similar or quite different form. Often the pole was a spear (*pololu kauila*), or a stick of well rounded koa (*Acacia koa*, Gray), and in later times cabinet makers formed the stems of alternating native woods. Many of these last, both large and small, are in this Museum but were unknown to the ancient Hawaiian. The old native had, however, a very elaborate form of handle made by stringing disks of tortoise-shell on a tough but slender core of kauila wood (*Alphitonia excelsa*, Reissek), or in the small ones of whalebone. The tortoise-shell was either used alone or alternating with bone or ivory. Making these handles was amusement as well as work for chiefs, and two that the high chief Paki, father of Mrs. Bishop, left unfinished at his death in June, 1855, are in the Bishop Museum and show well the method of construction: Fig. 11. On the whalebone core were strung twenty or more disks of the outer shell of the sea turtle, square or approximately rounded, then a ring of bone was pressed tightly down on the parcel of disks and the whole filed into shape and polished. This is precisely the process used in the manufacture of shell money once the common currency of the people of the western Pacific, though not generally among Polynesians. In the large kahilis the bone is often omitted and the whole series pressed closely together apparently without cement. Such handles are of great weight but always of elegant form and perfect finish. How early this manufacture began we have no means of knowing: the same work is shown in a fan handle once belonging to Kalaniopuu the King of Hawaii at the time of Cook's visit [B. M. No. 5011], and from the finish it can hardly have been a new process. Probably, as the turtle were abundant and the shell easily worked, the manufacture is of considerable antiquity.

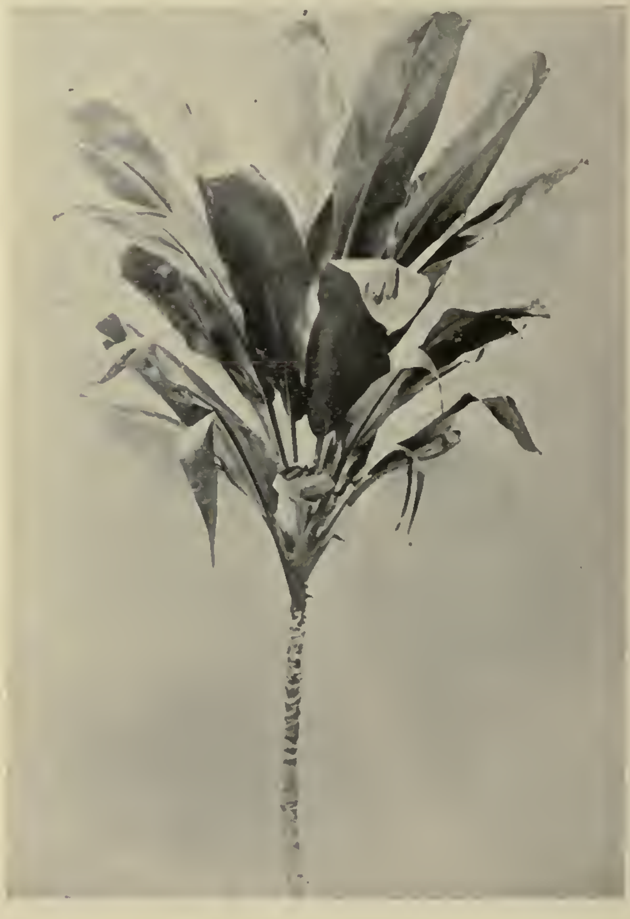
FIG. 9. STEM OF KI.

The bone alternating with the tortoise-shell is often human, as described by the early voyagers, and a good example is shown in Fig. 3, p. 7 [B. M. No. 24]. The *kumu* or principal bone is the right shin bone of Kaneoneo, a noted chief of Kauai who came to Oahu to fight for the religion of his fathers as well as for the independence of the island threatened by Kamehameha, and who fell in the battle of Nuuanu [1795]. The other bones, each from a different man, are of the brave chiefs who perished in the same battle and were thus honored by the conqueror.[14] It was an old Hawaiian custom to outrage the memory of an enemy by placing bits of his skeleton or teeth in some vessel of dishonor, or by making fishhooks or arrow points[15] of them; hence the care taken to hide the bones of prominent chiefs. On the other hand it was honorable to have one's bones placed on a kahili handle or inlaid in a *poi umeke*. The old men a generation ago knew the names of the chiefs whose bony relics are preserved in these kahilis while the rest of their anatomy has long been dust, but probably no one can now tell the tale. When a chief is at the point of death these bones are supposed to rattle, but as the chiefs are all dead they seem now to have abandoned their heraldic vocation. Another similar handle, but without feathers [B. M. No. 117], shown in the same illustration, was given by Paki nearly half a century ago to Gorham D. Gilman to whom he told all the names of the bones in order; but when Mr. Gilman gave the handle to the Museum he had long since forgotten the interesting list.

The feathers (*hulumanu*) were of every variety known to the Hawaiians, including such foreign ones as ostrich and peacock; but the old ones were of the tropic-bird, oo (both yellow and black), frigate-bird, pueo, iiwi and the barnyard fowl. In later degenerate times dyed duck feathers were used. The method of the modern florist who fastens his short-stemmed flowers to wires that they may have due prominence in his bouquet was practised by the islander of olden time, but as he had no wire he pressed into service the tough, slim midrib of the coconut leaf. Several of these, or of other stiff fibres, he bound together with the thread of oloná, attaching by the same thread the feathers to the separated ends of the main stem in a way shown more clearly in Fig. 12, p. 19. These feathered branches are tied together in small bundles and kept in quantity for use. How they were finally fastened to the kahili pole is shown in Fig. 13, p. 19.

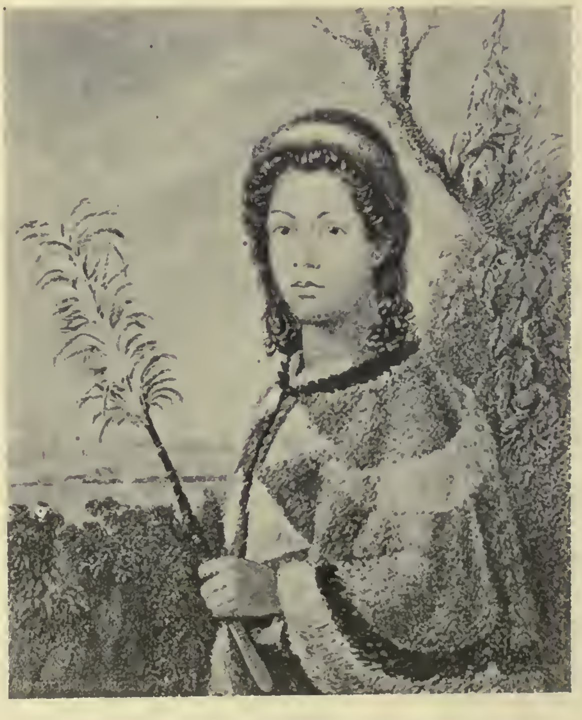

FIG. 10. NAHIENAENA, IN 1825.

I believe that anciently, before white influence was felt, no thought was given to fitness of color to occasion, and it was only by foreign teaching that reds and yellows were reserved for coronations or general state functions, while black and the sombre colors were appropriated to funerals. At the funeral of the Princess Pauahi the kahilis made especially for the funeral were of pure white as in keeping with her character. No such distinction held in the olden time. I do not forget that in the case of cloaks, and to a less degree with kahilis, yellow was a royal color as with so many oriental nations; possibly, as has been suggested, from gold the king of metals, but most likely from the sun the ruler of earthly life. The yellow robes of China, the yellow umbrellas of the East Indies, the golden disks of Peru,—and we might go back to the life-giving orb of the Egyptian Ra,—all proclaim the regal essence of yellow.

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[14] Doubtless bones of Kaiana, a chief of distinction, and of Kalanikupule, the last king of Oahu, are among these trophies.

[15] The only arrows used by the Hawaiians were directed solely against mice.

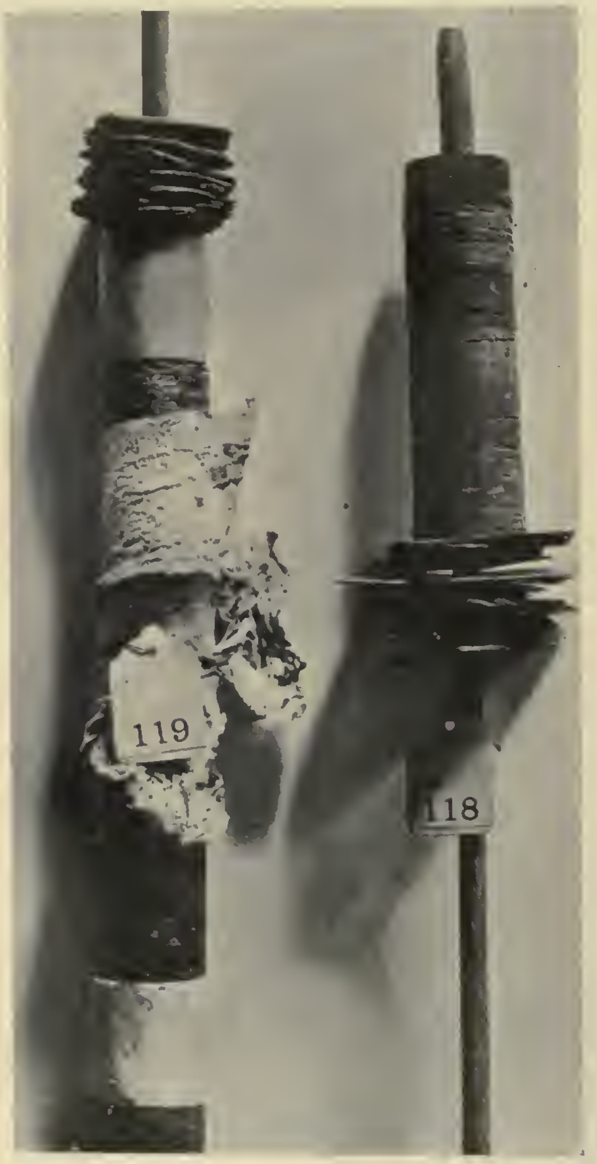

FIG. 11. UNFINISHED KAHILI HANDLES.

Formerly the base of the *hulumanu* or cylinder of feathers was closed or terminated at the base by an inverted cone of feathers kept in place by bands of kapa. This simple form gave way to rather tawdry sleeves of silk bound with long ribbon streamers of the gaudy colors dear to the colored races.

The very grand effect of the kahilis carried in a funeral procession will not easily be forgotten by those who have been present at such functions. From every side they present the same aspect, and the graceful forms add dignity to the stream of humanity almost as palms do to a tropical sunset. Nor alone in procession,—grouped about a throne or a bier they both decorate and add dignity to the place. The funeral of Kauikeaouli (Kamehameha III.), in January, 1855, was sketched by a Swiss artist, Paul Emmert, and from his drawing the illustration, Fig. 14, p. 20, is given. The pall upon the coffin was the royal robe of his sister Nahienaena, and many of the kahilis used on that occasion are now in the Bishop Museum. The officer in charge of the kahili was called *Paakahili.*

Before leaving the subject of kahilis we may recall the description given by Rev. C. S. Richards, in his Journal, of a celebration given in May, 1822, in memory of Kamehameha the Great. The American Mission had been on the Islands but two years and native customs had not been greatly modified, at least by the missionaries. It was on the last day of a long revel:

> "Tameha-maru [Kamamalu, the favorite queen of Liholiho] on this day was, as usual, a conspicuous object. The *car of state* in which she joined the processions passing in different directions consisted of an elegantly modelled whaleboat fastened firmly to a platform of wicker work thirty feet long by twelve wide, and borne on the heads of seventy men. The boat was lined, and the whole platform covered, first with imported broadcloth, and then with beautiful patterns of tapa or native cloth of a variety of figures and rich colours. The men supporting the whole were formed into a solid body so that the outer rows only at the sides and ends were seen; and all forming these wore the splendid scarlet and yellow feather cloaks and helmets of which you have read accounts; and than which, scarce anything can appear more superb. The only dress of the queen was a scarlet silk *pa'u* or native petticoat, and a coronet of feathers. She was seated in the middle of the boat and screened from the sun by an immense Chinese umbrella of scarlet damask [B. M. No. 5152] richly ornamented with gilding, fringe and tassels, and supported by a chief standing behind her, in a scarlet *malo* or girdle and feather helmet. On one quarter of the boat stood Karimoku [Kalaimoku]

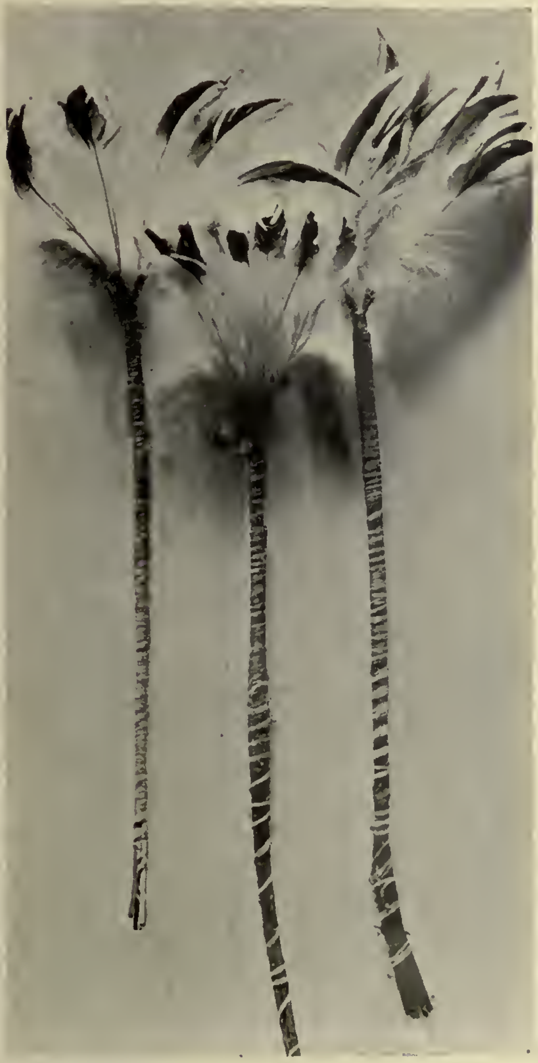

FIG. 12. BRANCHES OF A KAHILI.

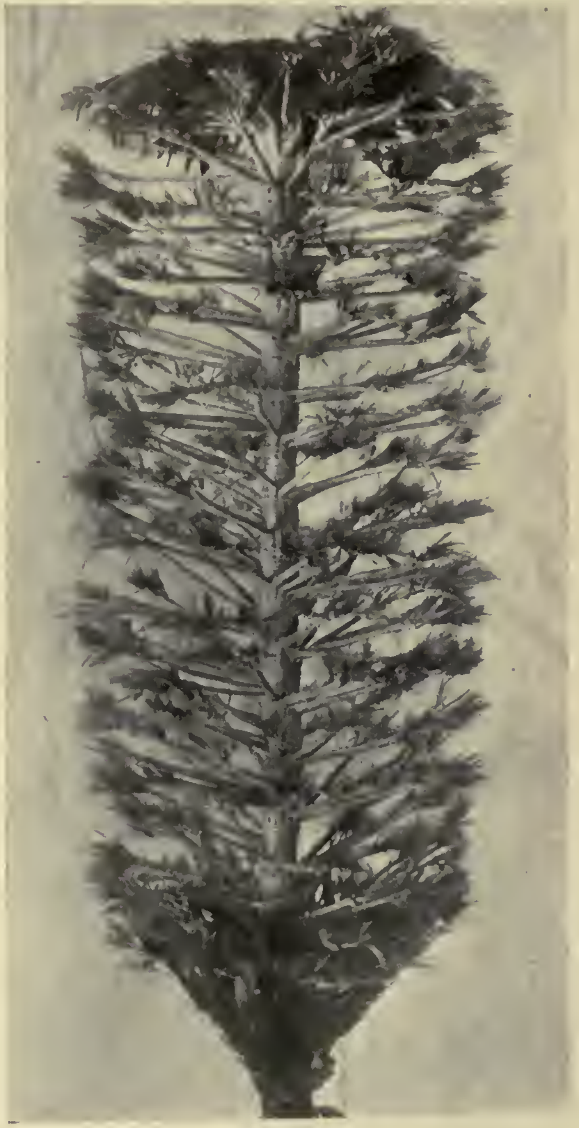

FIG. 13. HULUMANU OF A KAHILI.

the Prime Minister, and on the other Naihe, the national orator, both also in malos of scarlet silk and helmets of feathers, and each bearing a kahili or feathered staff of state near thirty feet in height. The upper parts of these kahilis were of scarlet feathers so ingeniously and beautifully arranged on artificial branches attached to the staff as to form cylinders fifteen or eighteen inches in diameter, and twelve or fourteen feet long; the lower parts or handles were covered with alternate rings of tortoise shell and ivory of the neatest workmanship and highest polish.

"Imperfect as the image may be which my description will convey to your mind of this pageant of royal device and exhibition, I think you will not altogether condemn the epithet I use when I say it was *splendid*. So far as the feather mantles, helmets, coronets and kahilis had an effect I am not fearful of extravagance in the use of the epithet. I doubt whether there is a nation in Christendom which at the time letters and Christianity were introduced, could have presented a *court dress* and insignia of rank so magnificent as these: and they were found here, in all their richness, when the Islands were discovered by Cook. There is something approaching the *sublime* in the lofty noddings of the kahilis of state as they tower far above the heads of the group whose distinction they proclaim: something conveying to the mind impressions of greater majesty than the gleamings of the most splendid banners I ever saw unfurled."[16]

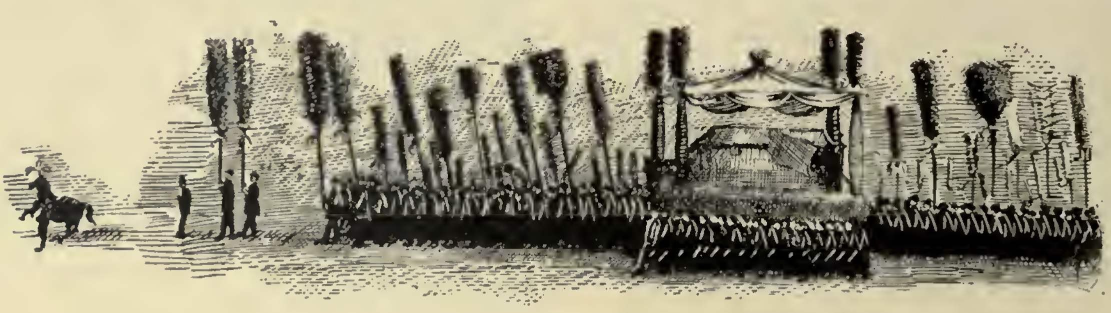

FIG. 14. PORTION OF THE FUNERAL PROCESSION OF KAMEHAMEHA III.

Not in the least does the excellent missionary exaggerate in his eulogy on the grand kahilis. Those of us who, in these latter days of the degeneration of all good native works and customs, have seen the kahilis wave above royalty, however faded,—the finely built and naked bronze statues that bore the kahilis replaced by clumsy, ill-dressed, commonplace bearers of neither rank nor dignity,—even the withered rose, most of its fragrance gone, has yet appealed strongly to our admiration and sympathy. The powerfully built chiefs, head and shoulders above the common crowd, free from all sartorial disfigurements, sustained easily the great weight of these towering plumes; but the modern bearer, stranger alike to the strength and virtues of his predecessors, has to call in the aid of stout straps of imported leather to bear the much smaller kahilis of the modern *civilized* days.[17]

It was a notable gathering of chiefs. Kamamalu was a daughter of Kamehameha I. by Kaheiheimalie (afterwards Hoapiliwahine), and as the wife of Liholiho went with him to England where she died July 8, 1824. Kalaimoku or Kalanimoku, sometimes called Pitt, was a chief, not of the highest rank, but was a valued counsellor of Kamehameha during his wars, and of considerable ability, energy and honesty, a combination of qualities useful, if rare, in the office of Prime Minister which he held during the regency of Kaahumanu. He died February 8, 1827. Naihe, called the national orator, was husband of Kapiolani, the enlightened alii who braved the goddess Pele in her very den Kilauea. He died in 1831. The grand old chiefs have passed away and not one descendant remains. With them have passed the gigantic kahilis of which the much smaller successors remain, no longer useful except as relics of the past.

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[16] *Private Journal of a Voyage to the Pacific Ocean and Residence at the Sandwich Islands, in the years 1822, 1823, 1824 and 1825.* By C. S. Stewart. New York, 1828: p. 109.

[17] It is but fair to state that the funeral processions of modern times have been much longer on the march than in the early days when streets wide enough for such displays were non existent, the town was small, and the passage from the palace to the royal mausoleum but a few rods long.

Of the large kahilis in the Bishop Museum the following list will show the variety. The group of most of these, Fig. 8, p. 15, well exhibits the variation in form.

LIST OF LARGE KAHILIS IN THE BISHOP MUSEUM.

1. Ash pole 11 feet high. Hulumanu 50 inches high, 24 inches in diameter; of black oo feathers; branches bound with black but attached to the pole with white cord. Used at the funerals of H. R. H. Keelikolani and of Mrs. Bishop. Black and white silk trimmings.

2. Kauila spear 12 feet long. Hulumanu of blue peacock feathers arranged in globular form, 22 inches in diameter, with feather base. It belonged to Queen Emma. The name Noel . . . . is partly obliterated. Orange trimmings.

3. Koa pole 10 feet high. Hulumanu of peculiar form, only 4 inches high and 34 inches in diameter; of peacock feathers. The conical silk base is 2 feet long. Pink and orange trimmings. A striking form, especially when alternating with the more common kind.

4. Kauila spear 12 feet long, with carved end. Hulumanu of green peacock feathers arranged in globular form, 22 inches in diameter; base of feathers. Kamakamao was the name of this kahili. Trimmings orange.

5. Koa pole 10 feet long. Hulumanu 4 inches high, 22 inches in diameter; of small black and white feathers. Princess Pauahi. Purple and lavender trimmings.

6. Painted pole (to imitate tortoise-shell and ivory) 14 feet high. Hulumanu 34 inches high, 26 inches in diameter; of black and white feathers. It was in the possession of Queen Emma and was named Laielohelohe. Purple and white trimmings.

7. Painted pole 13 feet high. Hulumanu globular, 13 inches in diameter; of duck feathers dyed red. Blue, white and cherry trimmings.

8. Painted pole 14 feet high. Hulumanu globular, 15 inches in diameter; of soft grey and white feathers. It belonged to Queen Emma and bears the label,—"Kalelehoano he inoa no ia no ka Moiwahine Ema, o keia na kahili opuu i ukali i ko ka Moiwahine hoolewaia ana." Cherry and terra cotta trimmings.

9. Kaulahoanalani, a metal-sheathed pole 9½ feet high; the alternate sections to represent gold and silver. Hulumanu 40 inches high, 15 inches in diameter; of soft

grey and white feathers in a close cylinder with red feather base. Given by the half-castes to the Prince of Hawaii, son of Kamehameha IV. Cherry and white trimmings.

10. Painted pole 14½ feet high. Hulumanu 15 inches high and 30 inches in diameter; of loose grey feathers mixed with the red tail feathers of the tropic-bird. The name was Kamakaalaneo. Cherry and lavender trimmings.

11. Kauila spear 10 feet long. Hulumanu 42 inches high and 18 inches in diameter; of peacock feathers. Blue and orange trimmings.

12. Painted pole 14½ feet high. Hulumanu 24 inches high, 30 inches in diameter; of dark fluffy ostrich (?) feathers. The inscription is,—"Kaleoaloha, he makana wale ia mai ka hulu; he inoa keia mawaena o ke alii a me kona haku kahili." Figured purple and plain orange base, purple and orange trimmings.

13. Ash pole 11 feet high. Hulumanu 30 inches high, 18 inches in diameter; of black oo feathers. "Kumaka he inoa ia o kona kupunawahine oia ka makuahine o Kamalalawalu moi o Maui." Buff and black trimmings.

14. Painted pole 14 feet high. Hulumanu 24 inches high, 18 inches in diameter; of black oo feathers.

15. Pole wound spirally with blue and white, 10 feet high. Hulumanu 30 inches high, 10 inches in diameter; of white feathers. Made by H. R. H. Lilinokalani for the Princess Pauahi's funeral. Pale blue trimmings.

16. Heavy kauila pole 14 feet high. Hulumanu 30 inches high, and 24 inches in diameter; of large feathers dyed red. "Leleoili he inoa keia no Kekelaokalani ko ka Moiwahine makuahine; he elua laua nei ma keia inoa." Orange and cherry trimmings.

17. Ash pole 10 feet high (cut down). Hulumanu 30 inches high, 26 inches in diameter; of iwa (Frigate-bird) feathers from the guano islands. H. R. H. Ruta Keelikolani. Cherry and orange trimmings.

18. Pole of inlaid native woods 13 feet high. Hulumanu 36 inches high, 34 inches in diameter; of tail feathers of the *Phaëthon rubricauda*. As there are but two feathers in the tail many hundred birds must have contributed to this kahili. Princess Pauahi. Cherry and white trimmings.

19. Tortoise-shell and ivory pole, slender and only 8 feet high. Hulumanu 24 inches high, 24 inches diameter; of yellow oo feathers; with its mate, No. 22, perhaps the most brilliant in the collection. H. R. H. Princess Victoria Kamamalu. Blue and yellow trimmings to a black feather base.

20. Kauila spear, turned, 12 feet long. Hulumanu 38 inches high, 36 inches in diameter; yellow oo feathers and red tail feathers of the tropic-bird; black feather base. As the tail feathers project 6–8 inches beyond the cylinder of oo feathers they are often neatly spliced to eke out the length. Black and orange trimmings.

21. Ash pole 12 feet high. Hulumanu 30 inches high, 26 inches in diameter; of large white feathers. Made for Mrs. Bishop's funeral. Light blue and white trimmings.

22. Tortoise-shell and ivory pole 12 feet high. Hulumanu 38 inches high and 36 inches in diameter; of yellow oo and the red tail feathers of the tropic bird; black feather base. Named Malulani. Mate to No. 20. Black and orange trimmings.

23. Pole of native inlaid woods 13 feet high. Hulumanu 36 inches high, 34 inches in diameter; of the red tail feathers of the tropic-bird. Mate to No. 18. Cherry and white trimmings.

24. Tortoise-shell and human bone pole 7 feet high. There are 12 pieces of bone representing that number of chiefs of renown, and the humu or principal bone is the left shin bone of Kaneoneo, chief of Kauai. Hulumanu 24 inches high and 12 inches in diameter; grey, white-tipped feathers of the koae; black feather base. Black and white trimmings. See Fig. 3, p. 7.

25. Stained wood pole 14 feet high. Hulumanu 30 inches high and 24 inches in diameter; of large feathers dyed red. Mate to No. 16.

26. Tortoise-shell pole 9½ feet high. Hulumanu very old, 24 inches high, 12 inches in diameter; of red and yellow feathers (oo and iiwi), and black base. Black and orange trimmings.

27. Painted pole 14 feet high. Hulumanu 36 inches high, 22 inches in diameter; of black oo feathers. "Kekuaipoiwa he inoa keia o ke kupunawahine oia ka makuahine o Kamehameha a me Keliimaikai."

28. Ash pole 11 feet high. Hulumanu 36 inches high, 30 inches in diameter; of peacock feathers. Princess Pauahi. Pink and yellow trimmings.

29. Painted pole 14½ feet high. Hulumanu 15 inches high and 30 inches in diameter; of loose grey feathers with red tail feathers of the tropic-bird. Mate to No. 10.

30. Tortoise-shell and ivory pole 9½ feet high. Hulumanu 50 inches high, 22 inches in diameter; of black ostrich feathers, grey and white tropic-bird base. Black and white trimmings.

31. Painted pole 14 feet high. Hulumanu 12 inches high, 24 inches in diameter; of fluffy ostrich feathers. Mate to No. 12.

32. Tortoise-shell and ivory pole 10 feet high. Hulumanu 27 inches high, 12 inches in diameter; of red apapane feathers with base of grey and white tropic-bird feathers. Cherry and white trimmings.

33. Painted pole 14 feet high. Hulumanu 10 inches high, 12 inches in diameter; grey and white feathers in globular form. Mate to No. 8.

34. Koa pole 11 feet high. Hulumanu in globular form 18 inches in diameter; of duck feathers dyed red. Light blue and white trimmings.

35. Painted pole 14 feet high. Hulumanu 28 inches high, 24 inches in diameter; of grey tropic-bird and green-black iwa feathers. "Keaka he inoa keia no kona kupuna a o ka hooholo loa ana o Keakamaha, a ua hea ia i keia kahili." Purple and white trimmings.

36. Koa pole, turned, 10 feet high. Hulumanu 6 inches high, 24 inches in

diameter; of small stiff black and white feathers. Princess Pauahi. Pale blue, purple and white trimmings.

37. Painted pole 14 feet high, with the imposing name Kalanikaumakamana. Hulumanu 15 inches high and 30 inches in diameter; of blue peacock feathers. Purple and yellow trimmings.

38. Koa pole, turned, 10 feet high. Hulumanu 8 inches high, 33 inches in diameter; of peacock feathers. Pink silk base, cherry and yellow trimmings.

39. Painted pole 13 feet high. Hulumanu 36 inches high, 24 inches in diameter; of black iwa feathers. "Kawao he inoa ia o kekahi kupuna ona; oia ke alii i ana maia i na makaainana kona kupapau a puni na moku o Maui; he alii aloha oia i na makaainana, a he aloha na makaainana iaia." Orange and black trimmings.

40–43. Kauila poles, 9½ feet high. Hulumanu 24 inches high and wide; of duck feathers dyed red. These four kahilis are inscribed as follows: "Pilialoha o na kahili pili eha keia ma ka aoao o ka pahu o Kekelaokalani i kona hoolewa ia ana, a oia no na pili o ka pahu o ko ka Moiwahine hoolewa ia ana." Cherry ribbons are attached. From the inscription it is seen that these four kahilis of dyed red feathers which were imported in quantity for hat ornaments, stood at the four corners of the stand on which reposed the remains of the mother of Queen Emma, Fanny Young. And when Emma, the grand-daughter of John Young, an English seaman and friend of Kamehameha I., adopted daughter of Dr. T. C. B. Rooke an English physician, wife of Alexander Liholiho (Kamehameha IV.), in turn was gathered to her ancestors, these four emblems of royalty,—and also of the foreign element so interwoven in her life, were held by bearers over her mortal remains as they reposed in state in the old Kawaiahao church.

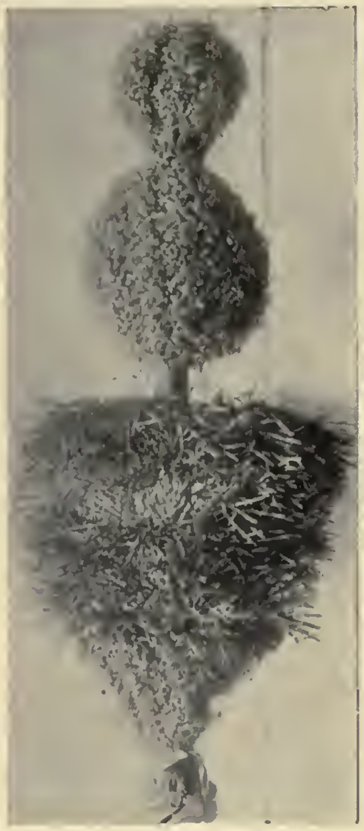

FIG. 15. KAHILI OF SUGAR CANE.

That kahilis were not always made with feathers is shown by the interesting pair in the Bishop Museum which were presented to Queen Emma January 2, 1883, as a birthday offering from the women of Wailuku, Maui. Fig. 15.

44–45. Poles of plain wood 12 feet high. The body of irregular form, made from the tips of sugar cane. See the one on the extreme right in the group of kahilis. Fig. 8, p. 15.

The tops of these interesting kahilis are shown more clearly in Fig. 15, where they remind one of the results of topiarian art seen formerly in old English gardens. The measurements given are approximate, as the kahilis are enclosed in sealed cases, but they are nearly correct. Notice is taken of the unornamental trimmings, but these are not the same the kahilis wore at their last public appearance, for they were redecorated by native women immediately before they were brought to their present cases and the Director is not responsible for the strange effects presented.

A kahili handle [B. M. 117] is shown in Fig. 3. It is made of tortoise-shell and human bone (those of Kaneoneo, Kalanikupule, Kaiana and other chiefs who perished in the battle of Nuuanu in 1795), was given by Paki to Gorham D. Gilman many years ago, and by him to the Bishop Museum. Many other handles of tortoise-shell and ivory are in the Museum collection and some of them are doubtless handles of those kahilis described by the Rev. C. S. Stewart in the account of Kamamalu's pageant just quoted.

No attempt is made to describe the many small kahilis in this Museum; specimens are found in most museums; and here, while they are in great number and variety, and often of considerable beauty, they are generally quite modern and made of foreign feathers. Sufficient illustration is given in Figs. 8 and 16, and Plate IV.

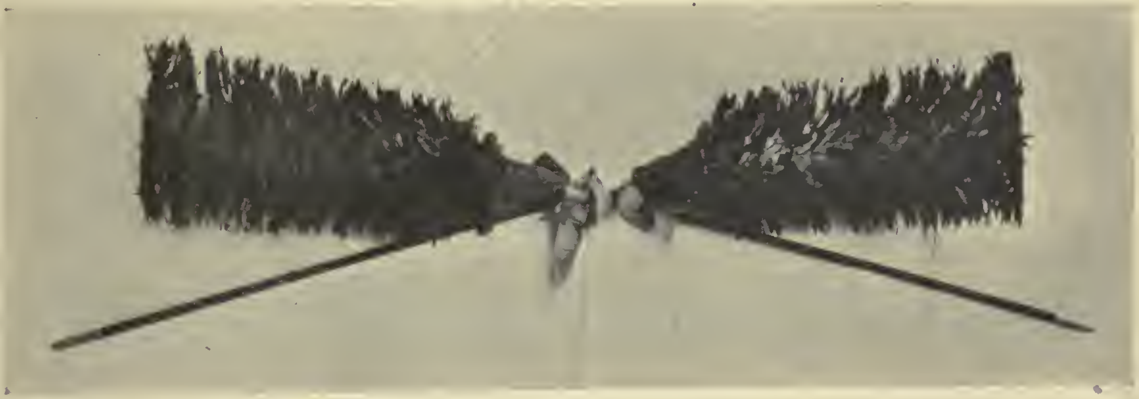

FIG. 16. SMALL KAHILIS.

FEATHER LEIS.

A *lei* was a very primitive form of personal decoration. Among the Hawaiians the favorite form was a necklace of the fragrant fruits of the screw pine,—the *leihala* "he leihala oe ma ka ai o ka poe naauao—thou art a hala necklace about the neck of the wise," well expressed the native estimation of this ornament. When made of feathers the name could hardly be translated necklace, for the lei of feathers was as often worn in the hair and about the head as about the neck: or the longer ones were thrown over the shoulder precisely as the long strings of flowers called lei at the present day are usually worn. It is best then to adopt the Hawaiian word without "doing it into English."

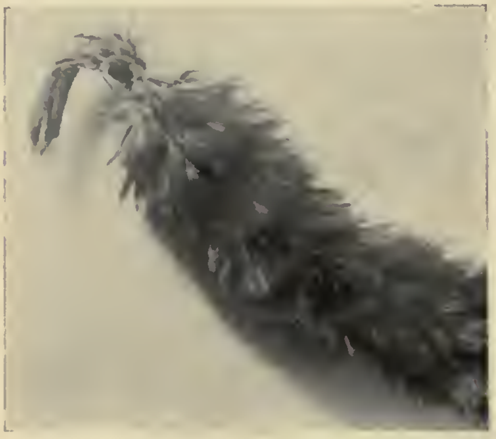

FIG. 17. THE GROWING END OF A LEI.

No feather work required less labor or skill than tying feathers around a core (usually of several strings of oloná or, in modern times, of cotton or woolen cord), but unless the work was thoroughly done there was danger of dissolution, and in case the lei came apart in windy weather the constituent feathers might be harder to retrieve than were the gold beads of our great-grandmothers when the retaining string accidentally parted.

The illustration, Fig. 17, will show how the feathers were tied (*haku*), and while the result was rather stiff, there was ample opportunity for display of taste in the arrangement of feathers both in colors and size. The long feathers, such as were used in cloaks and capes were sometimes used, but generally the smaller feathers were reserved for this purpose. Large feathers made a very hot ornament; several strands of a smaller diameter were cooler. When not in use the joint of a bambu made a convenient and safe receptacle. Leis of mamo and oo are highly valued at the present day. A superb one of mamo, an heirloom of the Kamehamehas [B. M. No. 2800] is valued at $1000, and another of oo quite as large [B. M. No. 2801] is believed to be worth $800. Small ones of oo not more than three-quarters of an inch in diameter and long enough to go around the neck (18 to 20 inches long) are now valued at more than $200. Of these smaller ones the leis of malvaceous flowers (*Sida fallax*) strung and sold in the streets of Honolulu are, so far as color goes, a very good imitation.

The flat bands of peacock or pheasant, or even of dyed feathers, are of course modern, often poorly made by sewing the feathers to a strip of cotton cloth, and used by natives and others for hat bands.

The true feather leis are generally of uniform cylindrical section and either monochromatic (especially in the case of the more costly feathers) or made up of alternating bands or spirals of mixed colors. In some cases leis have longer feathers inserted at regular intervals giving a pleasing variety of form. Figs. 18 and 19 will show some of the leis in this Museum.

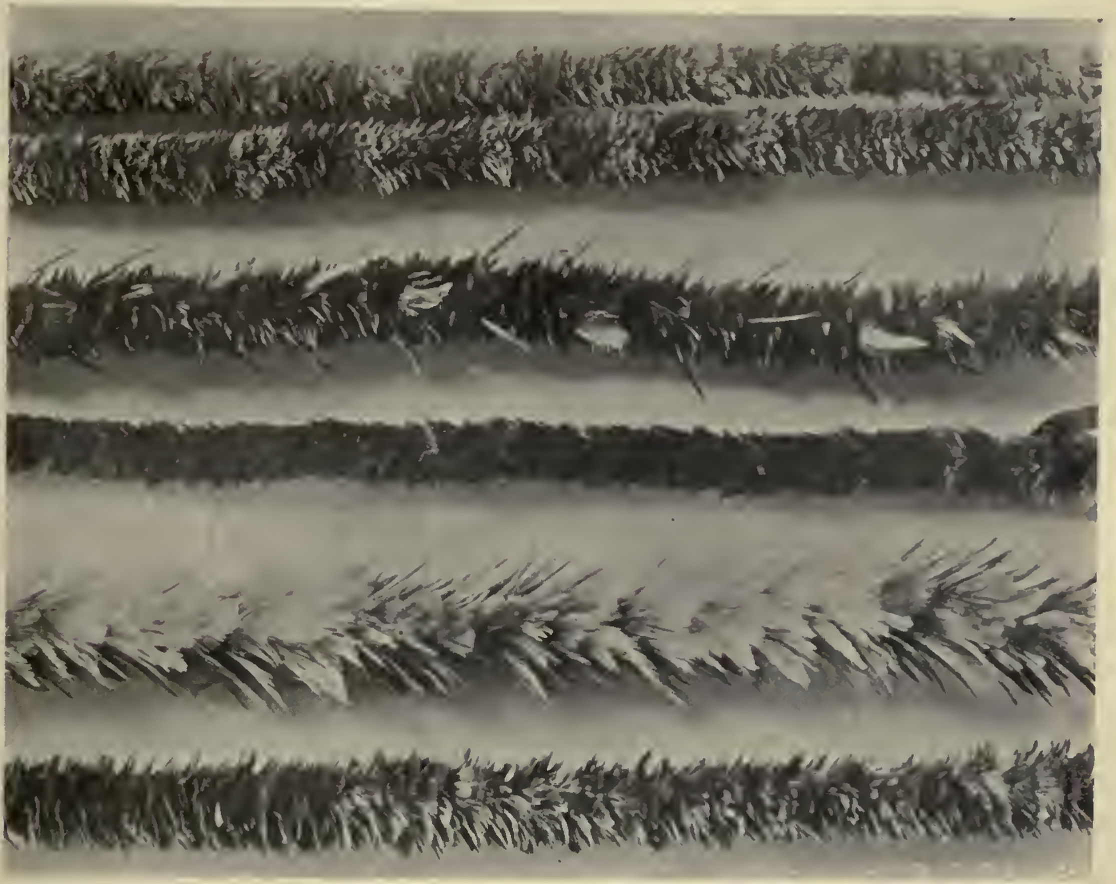

FIG. 18. HAWAIIAN FEATHER LEIS.

LIST OF FEATHER LEIS IN THE BISHOP MUSEUM.

[The numbers are those the specimens bear in the Museum Catalogue.]

2800. Mamo feathers of the choicest quality; made from three ancient leis belonging to the Kamehameha family; 3 inches in diameter, 24 inches long.

2801. Oo feathers, large and of brilliant yellow. While the property of the Government it was sent to an exposition in Paris and there ruined by the upsetting of a bottle of ink; the stains cannot be removed by any ordinary washing. This lei is with the preceding the largest I have seen either in museums or private hands; 24 inches long.

2802. Mamo under feathers, medium size, downy; 22 inches long.

2803. Mamo of even size; 24 inches long.

2804. Mamo, small; three-quarters of an inch by 20 inches long.

2805. Mamo, medium size with long narrow inserts; 22 inches long.

2806. Mamo, similar to the last; 25 inches long.

2807. Mamo, of medium size; 21 inches long.

2808. Apparently dyed to imitate mamo; 18 inches long.

2809. Mamo, close and stiff, few long exserts; 19 inches long.

2810. Mamo, with three short spirals of black oo and apapane; very elegant; 21 inches long.

2811. Mamo and iiwi, narrow spiral; 26 inches long.

2812. Oo and apapane in narrow spirals; 23 inches long.

2813. Mamo and iiwi, three sections of each, medium size; 19 inches long.

2814. Oo and apapane, four sections each; 21 inches long.

2815. Mamo and ou, six sections each, orange and dark green; 17 inches long.

2816. Mamo and black oo, five sections each, with long exserts, elegant; 24 inches long.

2817. Oo, long feathers; 20 inches long.

2818. Oo, mate to the last; 19 inches long.

2819. Oo and trimmed green feathers (?), three sections of each; 25 inches long.

2820. Like the last; 23 inches long.

2821. Yellow, dyed, with long crimson exserts, medium size; 24 inches long.

2822. Mamo and ou, three sections of each; 23 inches long.

2823. Mamo and oo, three sections each; 24 inches long.

2824. Oo and ou (pauku), three sections of each; 25 inches long.

2825. Mate to the last, but 23 inches long.

2826. In sections arranged mamo, ou, mamo, apapane, mamo, ou; 24 inches long.

2827. Oo and apapane, three sections each; 19 inches long.

2828. Oo and iiwi, three sections each; 17 inches long.

2829. Mate to the last, but 20 inches long.

2830. Oo and iiwi; 23 inches long.

2831. Mamo and iiwi, fifteen sections each; 24 inches long.

2832. Mamo and iiwi, sixteen sections each; 23 inches long.

2833. Oo and iiwi, sixteen sections each; 24 inches long.

2834. Oo and apapane, four sections each, very small and stiff; 21 inches long.

2835. Mate to the last, but 23 inches long.

2836. Three crimson and three green (dyed?) sections, long open feathers; 23 inches long.

2837. Three green, two crimson sections (unfinished), mate to the last; 15 inches long.

6727. Oo and iiwi, three sections; 24 inches long.

6728. Mamo, long open feathers with a few tinged with black; 23 inches long.
6729. Mamo and apapane, four sections each with long exserts; 21 inches long.

It will be noticed in this list that leis are often made in pairs, but one slightly longer than the other, the longer one being twisted around the other when worn in the hair.

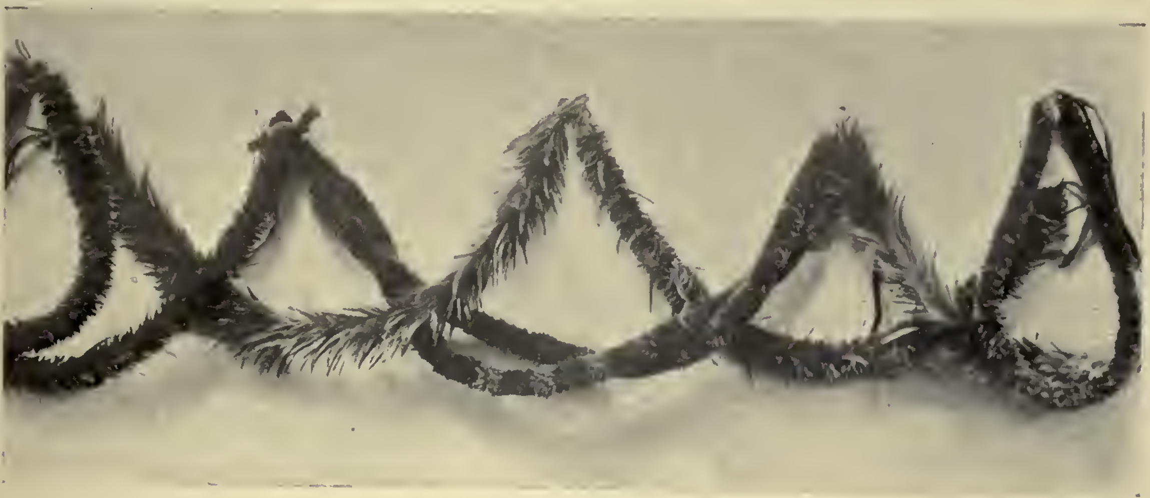

FIG. 19. HAWAIIAN FEATHER LEIS.

TEMPLE ORACLE: ANUU.

A MOST interesting relic of Captain Cook's visit to Kealakekua and his deification there is preserved with other objects from that voyage in the Hofmuseum at Vienna, where Dr. Heger kindly allowed me to examine it. Cook, it will be remembered, was regarded by the Hawaiians as superhuman and the apokatastasis of Lono, a deified chief of former days. The account of his worship is given at length in Cook's Voyages, and the rather nauseating details need not be repeated here. The heiau or temple in which the Cook apotheosis took place is still extant, although ruinous, but the frail edifice that in outer appearance took the place of a church steeple has of course disappeared; and although I have often searched on this and other heiaus for traces of its location the general surface of all these is now so disturbed that no signs remain. Fortunately Cook gives some details both as to structure and appearance and his account of the first landing on Kauai may be quoted:

> "As we ranged down the coast from the East, in the ships, we had observed at every village one or more elevated white objects, like pyramids or rather obelisks: and one of these which I guessed to be at least fifty feet high, was very conspicuous from the ships' anchoring station, and seemed to be at no great distance up this valley [Waimea]. To have a nearer inspection of it was the principal object of my walk. Our guide perfectly understood that we wished to be conducted to it, but it happened to be so placed that we could not get at it, being separated from us by the pool of water. However there being another of the same kind within our reach about half a mile off, upon

our side of the valley, we set out to visit that. The moment we got to it we saw that it stood in a burying ground or morai: the resemblance of which in many respects to those we were so well acquainted with at other islands in this ocean, and particularly Otaheite [Tahiti], could not but strike us, and we also soon found that the several parts that compose it were called by the same names. It was an oblong space, of considerable extent, surrounded by a wall of stone about four feet high. The space enclosed was loosely paved with smaller stones; and at one end of it stood what I called the pyramid, but in the language of the island, is named *hananaoo* [*he anuu*], which appeared evidently to be an exact model of the larger one observed by us from the ships. It was about four feet square at the base and about twenty feet high. The four sides were composed of small poles interwoven with twigs and branches, thus forming an indifferent wickerwork hollow or open within from bottom to top. It seemed to be in rather a ruinous state, but there were sufficient remaining marks to show that it had originally been covered with a thin light gray cloth [kapa] which these people, it would seem, consecrate to religious purposes; as we could see a good deal of it hanging in different parts of the morai, and some of it had been forced upon me when I first landed. On each side of the pyramid were long pieces of wickerwork." [18]

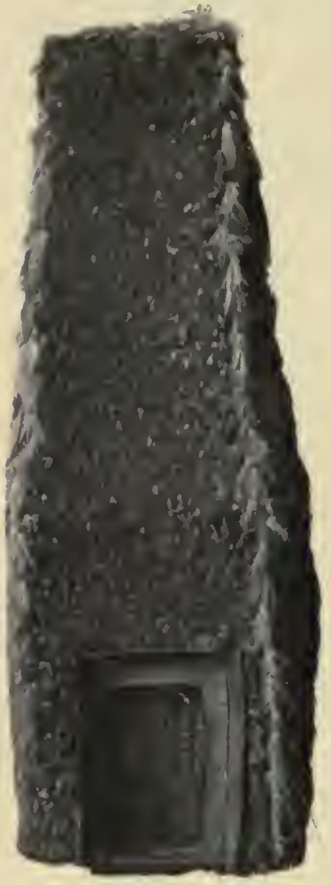

FIG. 20. MODEL OF AN ANUU.

This obelisk-like structure was an important part of all large heiaus, although not found in small private temples dedicated to personal gods, and was generally built of bambu to a height of twenty feet or more and covered with kapa. Its plan was rectangle but not a square. A single door in one of the longer sides, closed with a curtain, admitted the priest or chief to the interior where the voice of the god of the temple (luakini) was supposed to be audible. Cook entered one of these and with the priest climbed some distance up the frail staging. The priests of Cook's heiau (at Kealakekua on Hawaii) were well-to-do and influential men, were his friends to the last, although he destroyed their houses and goods and wantonly pillaged the temple,—in his desire for firewood removing the sacred fence,—and it is probable that they had made for him this unique model of the abode of the god-head. We have no other history of this model before it arrived in Europe. It was sold with other of the curiosities brought home by the expedition and passed to Austria, finally finding a home in the beautiful Hofmuseum.

It is neatly made of basket work covered with red feathers of the iiwi and trimmed on the vertical edges with the yellow oo. The doorway on one of the wider sides is cased with tortoise-shell to which time has given the coloration of rusty iron. The total height is twenty-three and a half inches. In the picture given by Cook's artist, Wäber, of a temple on Kauai the frame of a similar structure is shown. As the covering was very perishable, it is probable that it was renewed whenever the oracle was consulted, generally at the time of human sacrifices. With the Hawaiian collection at Vienna is a low-crowned, broad-brimmed hat of European form, once covered with feathers.

[18] *Cook's Third Voyage*, 1784: II., 200.

KUKAILIMOKU.

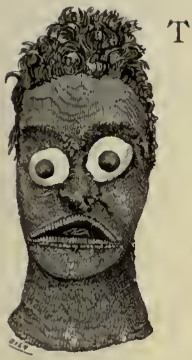

FIG. 21. KUKAILIMOKU.

THE Polynesian trinity of Kane, Ku and Lono, worshipped with various attributes and together or individually, developed on the Hawaiian Group a number of variations from the Polynesian originals (as indeed was the case elsewhere), and from Ku was derived (not descended) the war-like deity especially honored by the great Umi,[19] and later by Kamehameha who in other things as in parity of religion resembled his renowned predecessor. One recalls with Mr. Ellis[20] that Taire [Kaili] was a famous war god of Tahiti. Kuakimotumotu is the Maori name of a cluster of stars placed on the breast of Rangi [Lani, the heavens] by his son Tane [Kane]. Kamehameha was a religious man and from his war-like youth to the last scenes in his very active life Kukailimoku was the god to whom due rites were always paid. Hence it is not surprising that a number of effigies of this god, made in the most costly way known to the Hawaiians,—of feather work—should have survived the general destruction of idols after the accession of Liholiho.

It can hardly be out of place to trace briefly the conquest of the Group since Kukailimoku was considered the directing deity. On the death of Kalaniopuu, King of Hawaii at the time of Cook's visit, the kingdom was left to Kiwalaó, his son by Kalola, and to his foster son Kamehameha jointly, although the son was to be moi in chief. This was at the beginning of 1782 and before the year was half gone Kamehameha had slain his foster brother in the battle of Mokuohai. When Cook landed Kalaniopuu was king of all Hawaii and of East Maui, Kahekili of West Maui, Kumakoa of Molokai, Keliiaa of Lanai, Kahahana of Oahu, and Keawe of Kauai. By the death of Kiwalaó Kamehameha became nominal king of Hawaii, but by this time Kahekili had extended his power all over Maui, Lanai, Molokai and Oahu, and his brother Kaeo was king of Kauai. All this change was not effected without great loss of life, and part of the great decrease of population noticed by Vancouver in the fourteen years since his visit as sub-officer of Cook was due to these wars, which if not always very bloody certainly at times kept the average a high one. After the conquest of Oahu Kahekili avenged a conspiracy against his rule by so bloody a punishment that the Ka-po-luku or night of slaughter is said to have choked with the bodies of the slain the stream of Niuhelewai, just west of Honolulu; and at Moanalua a house was built of the bones of the victims. Another terrible slaughter was at the hill of Kauwiki in Hana, East Maui, the result of which was to make Kahekili master of all Maui.

When Kamehameha heard of the capture of East Maui he at once prepared to reconquer it and collected a considerable fleet of canoes at Kamilo in sight of the opposite shore and under the shadow of Haleakala, the "House of the Sun," that vast volcano that forms East Maui. To the invader Kahekili sent his younger brother Alapai with this remarkable message: "Say to him 'wait until the black kapa [shroud] cover me and my funeral rites shall be performed then come and receive your kingdom without the peril of war'—for indeed he is my son and from me he received his name after that of my elder brother."[21]

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[19] Umi was the son of Liloa, King of Hawaii. For his romantic story see *Récits d'un Vieux Sauvage pour servir à l'histoire ancienne de Hawaii, par Jules Remy;* or a translation of the same work entitled *Contributions of a venerable savage to the ancient history of the Hawaiian Islands; Boston, 1868:* by the present author.

[20] *Polynesian Researches*, I., 276.

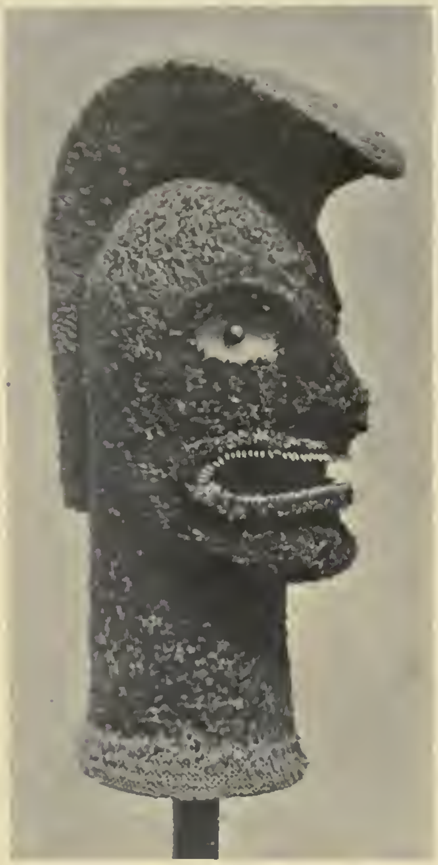
FIG. 22.

Even Hawaii was not to become one kingdom without many a struggle. Keawemauhili, uncle of Kiwalaó, had been the chief adviser in the course which led to the disaffection and death of his nephew, and after that event he held court in the district of Hilo, while Keouakuahuula, half-brother of Kiwalaó, ruled Kau, both disputing the authority of Kamehameha. A long and bloody war resulted in the submission of the king of Hilo who assisted Kamehameha in his attack on Kahekili, a proceeding which roused the ire of Keoua who immediately marched against his former ally and killed him in the battle of Alae. In the year 1790 Kamehameha invaded Maui and defeated Kalanikupule, son of Kahekili with great slaughter in the battle of Iao. While this was going on in Maui, Keoua, hot with the victory over Keawemauhili, marched into the district of Hamakua, Kamehameha's territory. This hastened the return of Kamehameha and after several battles, in which gunpowder was used on both sides, Keoua retreated to Hilo. While marching thence to renew the contest his army passing by the volcano of Kilauea was partly destroyed by the last explosive eruption recorded from that crater.[22]

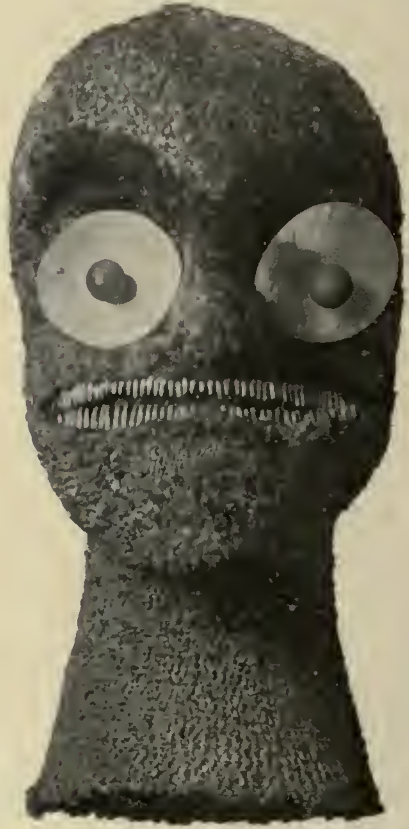
FIG. 23.

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[21] It is generally believed that Keouakalanikupuapaikalaninui, nephew of Alapainui, was the father of Kamehameha, but of this no man can know. The practice of adoption still farther complicated genealogies.

[22] For a full account of that eruption and the destruction of Keoua's forces see *Notes on the Volcanoes of the Hawaiian Islands: With a History of their various Eruptions.* By William T. Brigham. Boston, 1868, in the *Memoirs of the Boston Society of Natural History*, I., 404.

In the meantime Kamehameha was residing at Kawaihae and a priestly oracle had declared that a temple built on the hill Puuokohala in that place would avert the perils of war and insure the final conquest of the group. The king built the heiau called from the name of the hill, and as each part was finished bathed it with the blood of many human sacrifices offered to Kukailimoku.[23] From the dedication of this heiau his star was in the ascendant.

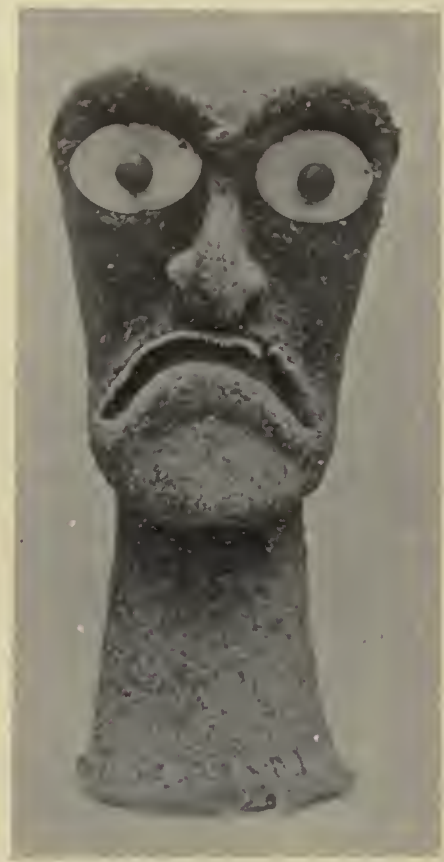

FIG. 25.

Kahekili and his brother Keawe from Kauai fought the naval battle of Kepuwahaulaula off the coast of Hamakua, near Waimanu, and were decisively routed by Kamehameha. The aged Kahekili retreated to Oahu where he died in July, 1794, leaving the remains of his kingdom to his son Kalanikupule. Before the end of 1791 Keoua Kuahuula was treacherously slain at Kawaihae by Keeaumokupapaiaaheahe and his body offered on the altar of Puukohala to Kukailimoku. After more than nine years of almost constant warfare Kamehameha was at last in fact king of Hawaii.

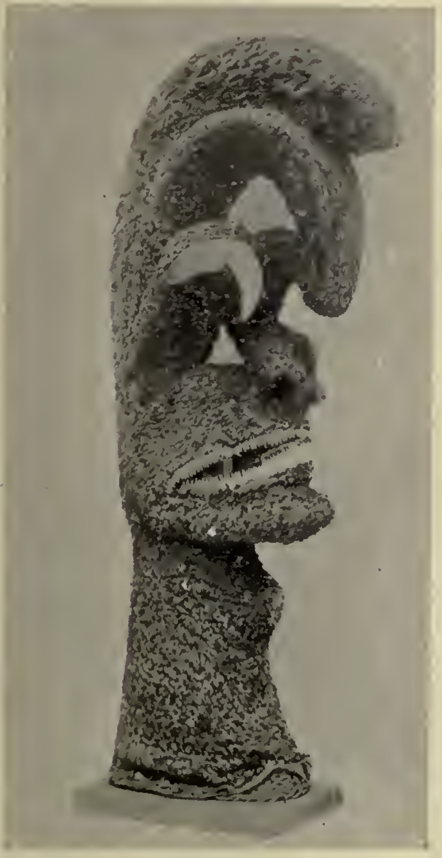

FIG. 24.

In the spring of 1795 Kamehameha invaded Oahu and in the battle of Nuuanu defeated Kalanikupule and his allies: the king fled to the mountains but was captured and his body offered to Kukailimoku. Kaiana, who had attained some prominence by a voyage to China with Captain Meares, and who had deserted Kamehameha while on this expedition to Oahu, was also slain, and the bones of these two warriors are believed to be among those decorating the kahili handles now in the Bishop Museum. Fig. 3, p. 7. In 1800 Kaumualii, king of Kauai, came to Kamehameha at Waikiki and arranged for the posthumous cession of his kingdom, and thus the sovereignty of the whole group came to the foster son of Kalaniopuu. After suppressing an insurrection on Hawaii peace came at last to the chief, and he devoted his energies to promoting the comfort of his people: he was also friendly to foreigners and protected their commerce. Among his orders was one to the bird-catchers: "When you take a bird do not strangle it, but having plucked the few feathers for which it was sought, set it free that others may grow in their place." They inquired, "Who will possess the bird set free? You are an old man." He added, "My sons will possess the birds hereafter."[24]

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[23] For a good account of the building of this last great temple of the old worship, and the same method was always used, so far as we are informed, see *An Account of the Polynesian Race, its origin and migrations, and the Ancient History of the Hawaiian people to the times of Kamehameha I.* By Abraham Fornander. London, 1880. II., 327.

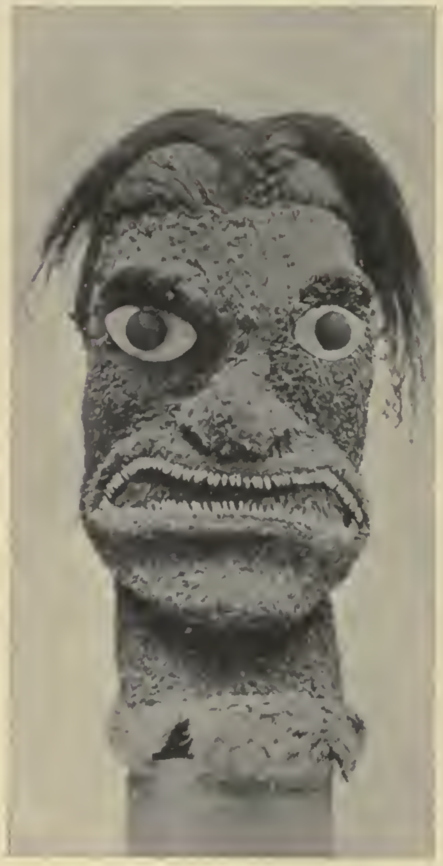

FIG. 26.

As death drew near and the priests could not heal the increasing infirmity of the king, a special house was built for Kukailimoku at Kailua, on Hawaii, where the king was living at the time, and human sacrifices were proposed, but the dying king declared, "The men are sacred to the king" (his son Liholiho). And so the head of network covered with red feathers which had been his deity, and the object of all his prayers and offering, was held to still as Kamehameha went to his grave. There is little doubt that the image once in the cabinet of the American Board of Commissioners for Foreign Missions in Boston, and now in the Bishop Museum [No. 7855] was the particular one to which the dying king turned for unavailing help. Certainly those carried away by Cook's officers and by Vancouver, and now in London and Vienna could not have been, and it is improbable that the idol of the founder of the family would have been destroyed in the general destruction of the temples and gods in the beginning of the reign of Liholiho.

And how is it that we have still extant a number of these feather-covered heads of varied form and more or less repulsive features? I do not know that there are more than those now stored in the museums of Vienna, London and Honolulu, but it is quite possible that others were hidden in caves at the time of the overthrow of the ancient Hawaiian religious system, as tradition claims. It must be remembered that although to the present generation Kukailimoku is known as Kamehameha's war-god, the deity had been the object of an ancient cult,[25] and many images may have been made in various parts of Hawaii, and the process of manufacture, as will be seen below, lent itself readily to individual variation. How did Cook and Vancouver obtain possession of these images? In Cook's case it is not improbable that his supposed divinity would influence the aged king Kalaniopuu to present an image of a brother god; or it is not at all inconsistent with known facts that the image may have been stolen, for the morality of those times seemed to permit "the spoiling of the Egyptians" while abusing the latter as arrant thieves. This image, now at Vienna, is certainly the most kindly looking of its congeners, not at all war-like or repulsive.

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[24] *History of the Sandwich Islands.* By Sheldon Dibble. Lahainaluna, 1849; p. 75.

[25] Kūkaili-moku in Hawaiian means 'Ku that seizes the islands. Many authorities claim that this god idea was not anterior to the time of Umi, and was naturally adopted by the ambitious young Kamehameha as a suitable promotor of his designs.

When Vancouver returned to Hawaii Kalaniopuu had gone to his long rest and the young Kamehameha was reigning over the portion of the island at which he touched, and the wily king may have been quite willing to have rival images well out of the way; and certainly after Vancouver's visit no more of these god-heads appeared, while the particular one entrusted by the dying Kalaniopuu to his foster son and successor in the priestly office was more assiduously worshipped than ever. Kamehameha's god was removed from vulgar sight soon after Liholiho's defiance to the priesthood and the kapu, and from the cave where it was hidden it only emerged to go to the cabinet of the American Board of Commissioners for foreign Missions. It is unfortunate that so little is known of the personality of these Hawaiian deities, but so great was the shame for all these native customs instilled into the minds of the early converts by the American missionaries that it was almost impossible, even a generation ago, to get details of worship or ritual from Hawaiians,—they had made a business of forgetting; it was "*no mi ricordo*" to all questions in that direction. I have frequently conversed with old Hawaiians, both on Hawaii and on Molokai, who had been familiar with the rites of the ancient cult, but they always showed restraint when speaking of them. They described the processions and positions of priests and idols, but passed over the human sacrifices briefly.

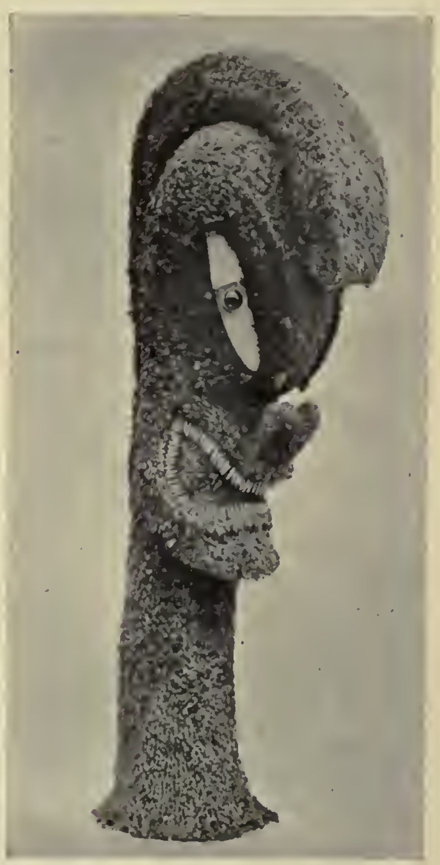

FIG. 27.

The structure of these peculiar images is simple. A wickerwork, neatly made of the long and very durable aërial roots of the ie-ie (*Freycinetia arborea*) in such a way as to show the general form and features, is strongly braced by hoops or ribs within, and then covered with a tightly fitting net of oloná to which feathers were attached, as in the feather cloaks which will be described later. Red iiwi was the basis to which yellow and black oo was added for embellishment or to demark features. In some cases human hair crowned the head, in others the mahiole or crest. The eyes were of pearl shell, and in those in the Bishop Museum are attached in two ways by carved knobs of dark wood representing pupils. Fig. 29. In one (A) the stem of the knob is perforated by conical holes whose apices meet, and through the hole thus formed a cord of coconut fibre makes fast the whole pseudo optical device. In the other (B) the end of the stem is left somewhat larger than the rest to hold in a cord of sinnet. One or the other of these methods prevail, I believe in all cases, except the one called Vancouver's, Fig. 24, where there is no pupil. The teeth were those of dogs saved from the priestly feasts. Ears were represented by small patches of black or yellow, sometimes by both colors united.

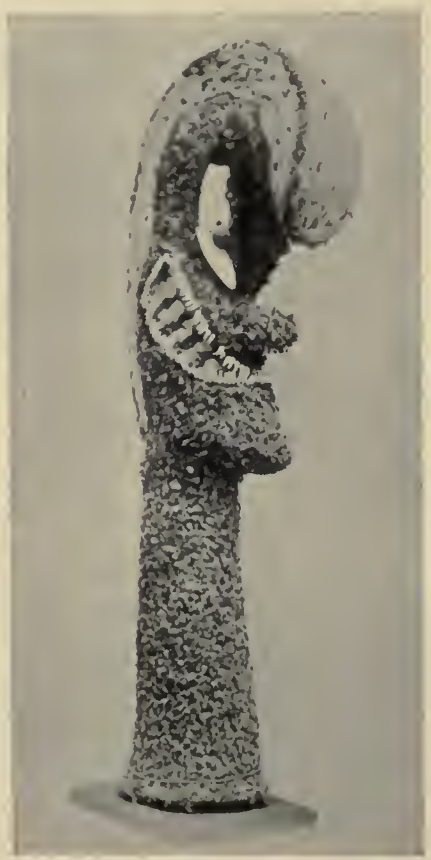

FIG. 28.

These gods were carried in battle on kauila poles, most of them having no other sufficient support, and being also too small to be placed over the head of a priest, as has been suggested.[26] An inspection of the illustrations will make this plain.

The details of the worship, so far as they are known, need not be entered into here; but it may be stated that human sacrifices were a sad adjunct to all important rites. Many hundred victims are reported, although the true number cannot now be determined. I am inclined to connect with the worship of Kukailimoku the two curious mats now in the British Museum and shown in Pl. VI. I cannot claim any satisfactory authority for the opinion, but I have endeavored to find some use for these elaborate matlike objects, on the supposition that they are of Hawaiian origin, and cannot find that any of the suggested uses are allowable, whether dress, ornament or armor, standard or insignia. They are flat, stiff, not very solidly bound together, and the patterns quite unlike those used in the feather cloaks: there are, moreover, no signs of attaching cords or braids by which they might be joined to other objects. Now it was the custom in worship to place the image of a god, unless of too large size, on a mat of pandanus covered with red kapa, and on the same mat the offerings were made. This custom has been retained to the present day in the poor remnants of heathen worship that appear sporadically among the people. We have in the

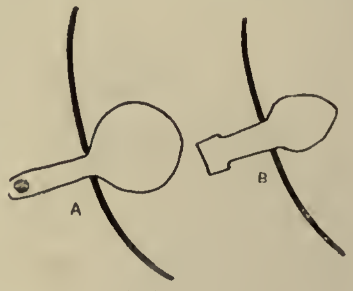

FIG. 29.

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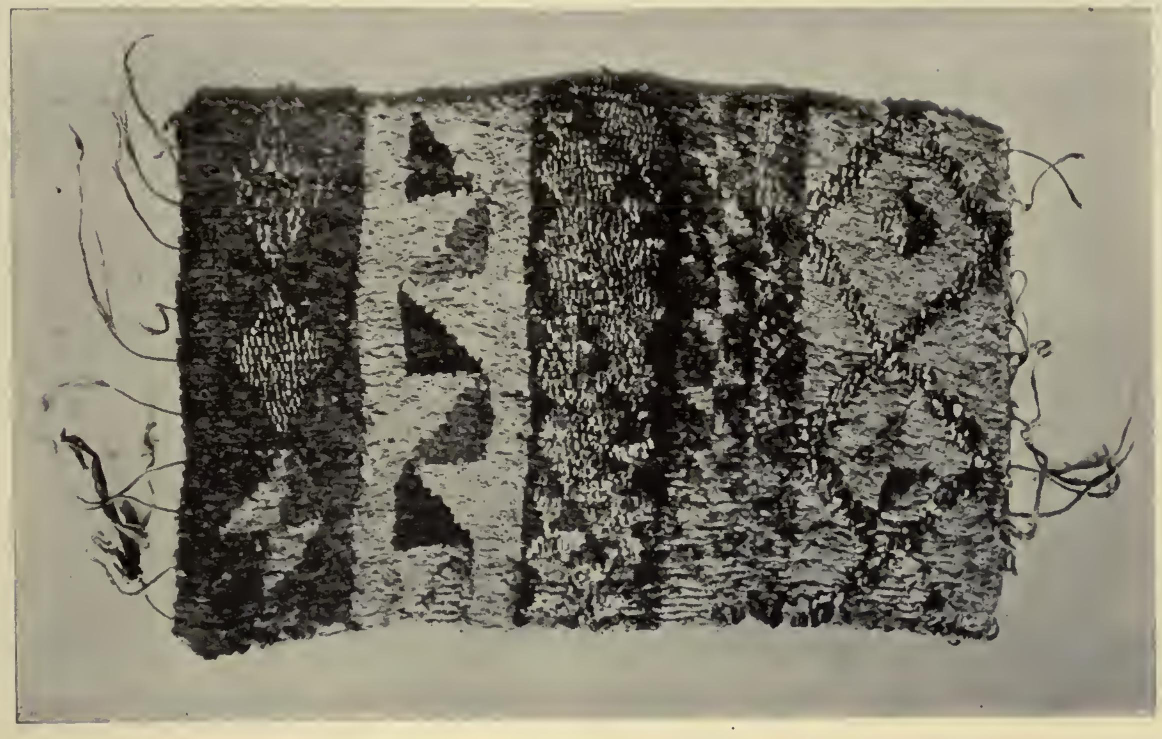
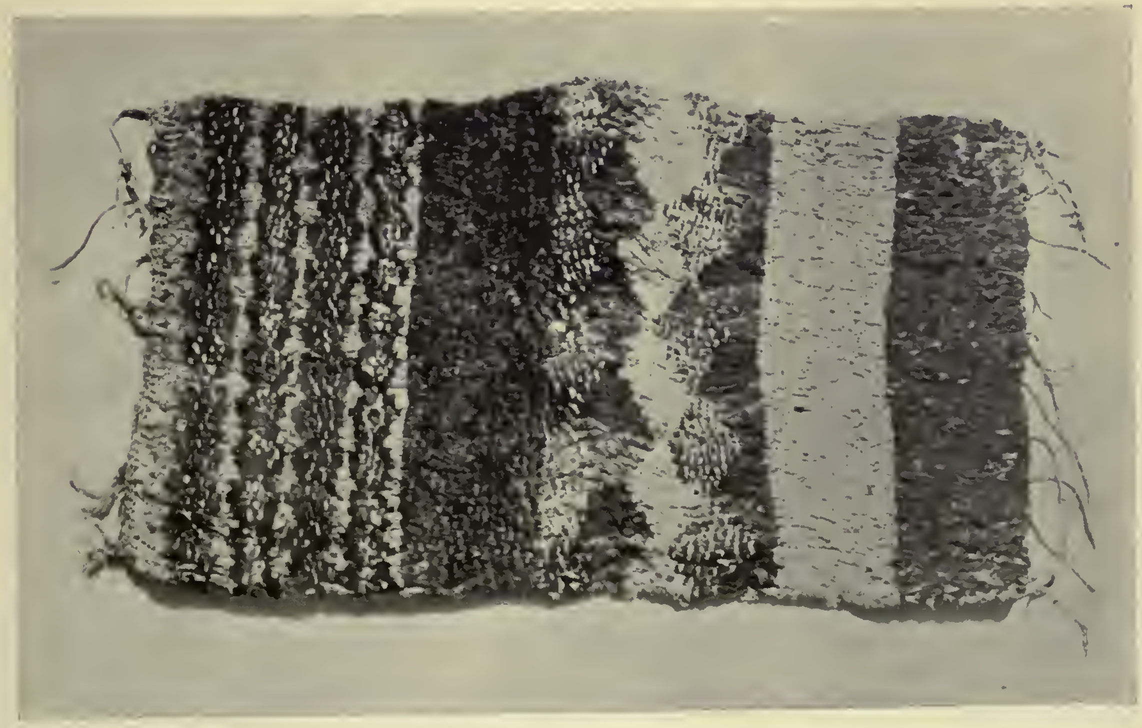
[26] In a recent publication on Hawaiian feather work it has been stated that the feather-covered heads are "dancing masks." I do not know any authority for the statement. The Hawaiian dances were not such as would require masks of any kind, least of all those with repulsive features. The heads in question could not have been used for any such purpose.

36 a





FEATHER MATS IN THE BRITISH MUSEUM.

Bishop Museum all the paraphernalia of an offering to a rude stone god, and the mat is covered with Turkey-red cotton, on one end of which the god stands flanked by a bottle of whiskey and one of gin, while offerings of awa root with fern and dracæna leaves are before him, and intermingled are various ancient relics to bring to the modern *kahuna* all the influence or *mana* of the ancient days. Is it unreasonable to suppose that a god, distinguished by the material always used in his construction, should be placed on a mat of the same costly feather work, either when deposited in the sanctuary or when used as the object of prayers and supplications? Until I can see some better use for these mats I must be allowed to appropriate them to the worship of Kukailimoku.

The two mats are made of very short red, yellow and black feathers attached to rods which are bound together not unlike the structure of some of the helmets. The ornamentation is in transverse bands of various widths, either plain or elaborately figured as may best be seen in the photographs which Mr. H. Oldland, of the British Museum has kindly made for me. The loose cords attached rather irregularly to each end are not of sufficient strength to be used as fastenings. The length of the larger one is 22½ inches, the breadth 14½ inches; while the other is 22 inches long and 12 inches wide. The design seems much more Mexican than Hawaiian.

LIST OF KUKAILIMOKU.

1. First I place the probable god of Kamehameha. This is 27 inches high over all, while the crest is 4½ inches, and the diameter of the base of neck 9 inches; weight, 3 lbs. 1 oz. The frame is a compact basket work of ie-ie roots made in one piece and strengthened by four hoops. This is closely covered with a net of oloná, to which are attached red feathers of the iiwi, except on the top of the crest and the base of the neck, which are yellow oo, and the eyebrows, nostrils and two small square spots two inches behind the eyes (intended to mark ears), which are black oo. It is in good preservation except at the base of the neck. The dog teeth number 94,—49 in the upper jaw and 45 in the lower; the open space between is filled by a red feather tongue. The teeth are broken at the base and bound in place by a firm cord about the middle, but the points are intact. This head was hidden in a cave in Kona for many years, and at last as its hold on the superstition of its kahu or keeper weakened under the influence of the new religion, it was brought as an offering to the missionary of the station, and through him transferred in 1850 to the museum of the American Board of Commissioners for Foreign Missions in Boston: from this collection it came to the Bishop Museum by purchase. The eyes are thick pieces of pearl shell pierced through the middle where a round knob of black wood is inserted in the manner shown in Fig. 29, B. Fig. 22, p. 32.

2. A smaller head, shown in Fig. 21, which was engraved from a photograph taken by the author in 1865 when the idol was in the cabinet of Oahu College at

Punahou. It was then in fair condition, but now is greatly dilapidated. The height is 22 inches. Instead of a crest there is a wig of human hair of a reddish tone, and the mahiole is long and curly. The substructure is of the usual form and material, and the oloná net is now much torn and loosened from the wicker work; while the feathers, which were originally red, have mostly disappeared. The eyebrows were black and the base of the neck yellow. Eyes as in the previous description, but the pupil fastened in in the way shown in Fig. 29, A. There are 74 dog teeth, 40 in the upper and 34 in the lower jaw; these are all filed at the points, or perhaps worn. The base is broken and without trace of feathers. Given to the Bishop Museum by the trustees of Oahu College.

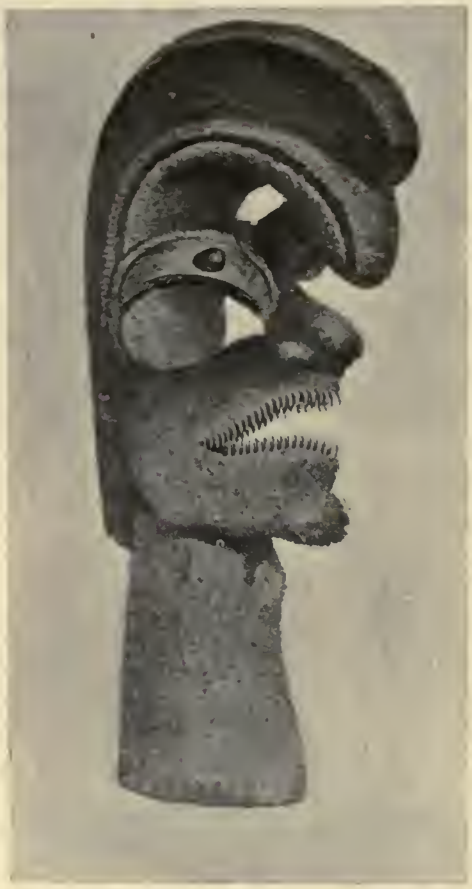


FIG. 30.

3. A head originally in the Cook collection, now in the kairserlich-königlich naturhistorische Hofmuseum at Vienna. Of all known Kukailimoku this has the most benignant expression, if such a quality can be predicated of an object so removed from correct human form. It is in good order and quite like No. 1 in construction. Red, with yellow trimmings and black eyebrows. Fig. 23.

4. A curious variation, Fig. 24, originally in the collection of Mr. Geo. Goodman Hewitt, surgeon's first mate on Vancouver's ship. It remained in the possession of his family until 1890, when the collection of which it was a part was purchased by the late Sir A. Wollaston Franks, and by him presented to the British Museum. The frame is 39 inches high, covered with neatly-fitting oloná net, to which are attached in the usual way red iiwi for the principal covering, the crest and base of neck being of the usual yellow oo. A yellow and black square marks the place for the ears, and there is a narrow black line of oo on each side of the curious projection beneath the crest. The right eye alone remains, a crescent of pearl shell not perforated as in all the other examples, and so having no black pupil, but now cracked across the middle. The teeth are from dogs, and there is a very prominent "Adam's apple" on the long neck. Mr. Dalton, of the British Museum, has given a colored figure of this curious variety.[27]

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[27] *Notes on an Ethnographical collection from the West Coast of North America (more especially California), Hawaii and Tahiti, formed during the Voyage of Captain Vancouver, 1790–1795, and now in the British Museum.* By O. M. Dalton *Archives Internationales D'Ethnographie*, X., Pl. XVI.

5. Head with human hair braided in the centre of the forehead. Red, with broad, yellow base to the short neck. As may be seen in Fig. 26, it has a very expressive countenance. Height, 24 inches. The eyes have very large pupils of wood. British Museum.

6. Image with low forehead and very prominent black eyebrows; base of neck, as usual, yellow. Height, 32 inches. Eyes very large, with wooden knobs; the pearl-shell of the right eye is broken through the middle. British Museum. Fig. 25.

7. Very long, slim neck, adding greatly to the height (41 inches), and giving a snake-like physiognomy. Yellow covers the crest and sides, extending to the neck. British Museum. Fig. 28.

8. Long neck and extensive crest. Great development of the head immediately under the crest accompanied by an atrophy of the lower portion. The eyes are long and narrow pearl-shells, the right one in two portions. Covering mainly of red. From the London Missionary Society; deposited in the British Museum. Fig. 27.

9. To these may be added the one figured in Cook's Voyages, which differs from any of the others in the hollow head and horizontal eye. It is not known what became of this. It resembles No. 4. Fig. 30.

MAHIOLE OR HELMETS.

In every day life the ancient Hawaiian trusted to the protection of his thick, coarse hair and wore no hat. When the conch-shell trumpet called to battle, however, the chiefs donned a head-covering both ornamental and useful. While it was firm and thick enough to resist a severe blow, it was remarkable for beauty of form. So graceful were its lines that writers have likened it to the helmets of the Greeks and wondered at the connection. Did the Hawaiians borrow the form from the Spaniards or other Europeans? To this we must answer decidedly no. Neither Spaniards nor other Europeans wore Greek helmets at the time when intercourse would have been possible; nor is it probable that any of these voyagers knew anything about Greek helmets. It would be more reasonable to look in the opposite direction, to New Guinea, where the forms of head-covering varied greatly it is true, but often presented a form far more analagous to the Hawaiian mahiole than anything we find on Greek medals, coins or sculptures. Figure 31 will show the connection. It came from the northern coast of New Ireland [B. M 1664], a region where many Polynesian colonies are found. Dr. von Luschan has figured another from the same locality in his interesting essay on the influence of foreign art on African productions.[28] Indeed caps with crests are common enough all over the world, but the old Hawaiian had another excuse for the form of his head covering. It was a custom to cut the hair close at the sides of the head leaving a ridge of stiff, erect hair, like a mane on the top of the scalp, and this mane-like ridge was called *mahiole*, the same name that was given to a helmet. Originally this personal decoration was a mark of rank, but like all such exclusive tokens was in course of time seized by the aspiring democracy. At the period when feather helmets were in vogue the mahiole was a token of chieftainship, and if covered by any cap, the latter would repeat the token. Hence the skullcap was supplemented by a ridge which often, as will be seen in the illustrations, became an imposing crest. Cook and his companions were much impressed by the beauty of this helmet and the accompanying feather cloak; the picture given in his

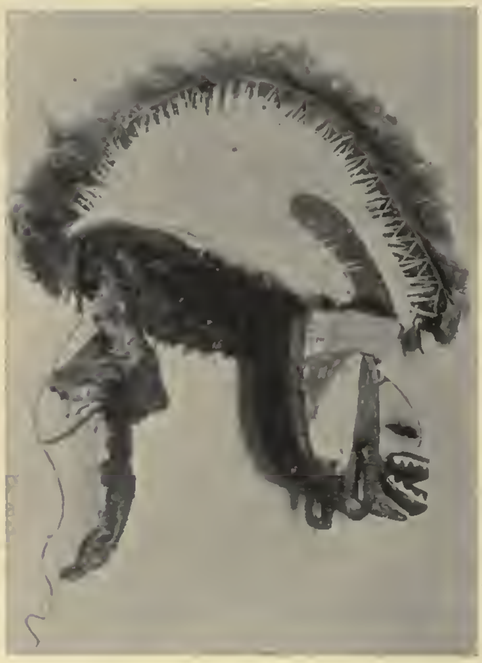

FIG. 31.

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[28] *Fremder Einfluss in Afrika.* Felix von Luschan, *aus Westermans Illustrierten Deutschen Monatsheften, September, 1898.*

Voyages, Fig. 32, shows well a good specimen, which, by the way, closely resembles one now in the British Museum.

The structure was in general of wicker work made of ie-ie or other material, often beautifully plaited, as will be seen in the illustrations given. Over this was neatly fitted a net of oloná to which feathers were attached, usually red with crest of yellow and lines of black or green. In many of the helmets that have survived this net has gone as well as the feathers, and no traces are left of the once splendid covering. The remaining frame is so well made in many instances that I was once persuaded that the specimens in question were never intended to be covered with feathers, but I am now convinced that all were covered with feathers or human hair. In some cases the crest is partly detached from the cap and held in place by spurs; and in several the crest has been so modified that only a row of knobs remains: several of this latter form are in European museums, but none have the feathers left; so I am unable to verify my opinion that these knobs were really the base or support of feather plumes. It is

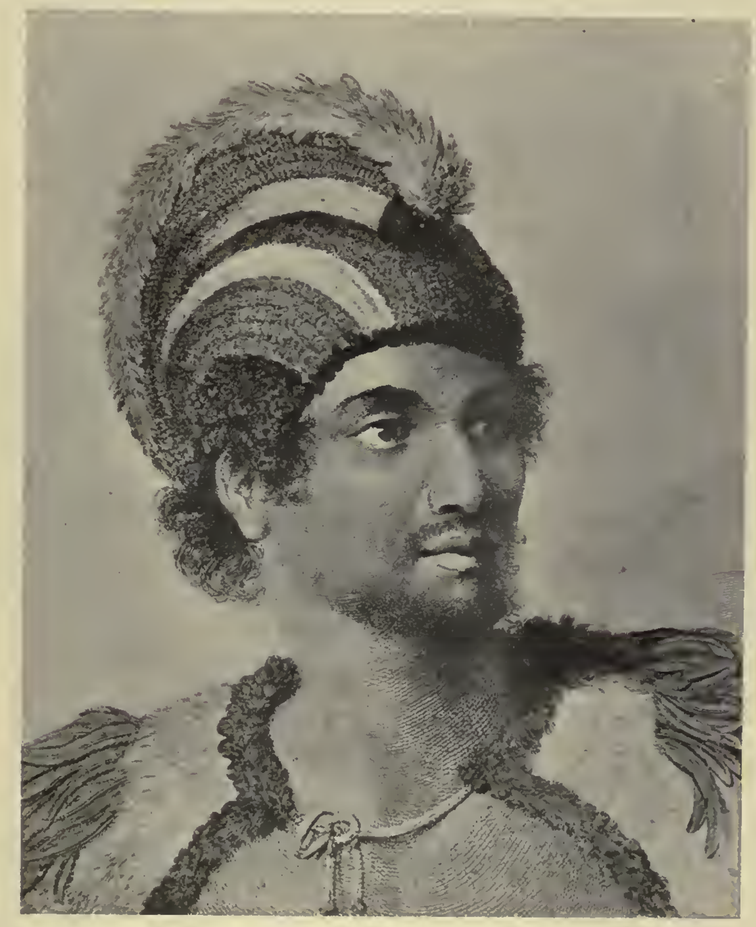

FIG. 32. HAWAIIAN WARRIOR, COOK'S VOYAGE.

remarkable that so many helmets remain, as they were not so easily preserved or hidden from an enemy as were the feather cloaks, but it will be seen by the following list that many are still preserved in museums, while doubtless some few are still in private hands.

LIST OF HELMETS OR MAHIOLE.

1. Mahiole of Kaumualii, King of Kauai, who died May 26, 1822. This is the only helmet whose former owner is definitely known, and it is in most perfect preservation, in fact it is precisely in the same condition as when last worn. It was given, with two feather capes (Nos. 14 and 78 of the list) to the Rev. Samuel Whitney, one of the first company of American missionaries, by Kaumualii when he was taken a state prisoner to Honolulu. Mr. Whitney, whose station was at Waimea, Kauai, was skilled in the healing art and had been of considerable service to the king in that way, and the royal prisoner, who supposed he was going to his death, expressed his acknowledgment by this offering of what was perhaps his most valuable personal property. Preserved in the Whitney home for half a century, it was sold on the death of Mrs. Whitney, in 1872, Hon. Chas. R. Bishop, then Minister of Foreign Affairs, purchasing it and giving it to the Government Museum, from which collection it came to the Bishop Museum after having been exhibited at the Paris Exposition in 1889, and in other places. The wicker work is finely made and very substantial although light (it weighs 14 ounces); the body and sides of the crest are covered with red iiwi feathers, the top of the crest is of yellow oo, and there are small patches of black oo on the front edge and a yellow spot over each ear: these last do not show in the figure, Plate I., which was made by Löwy in Vienna from a negative by the author. The extreme height, as shown in the plate, is 15½ inches; width, 6¾ inches, and depth 10 inches. Museum No. 959. The feathers are attached directly to the frame without the usual *nae*.

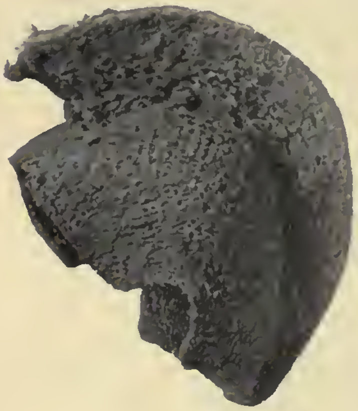

FIG. 33.

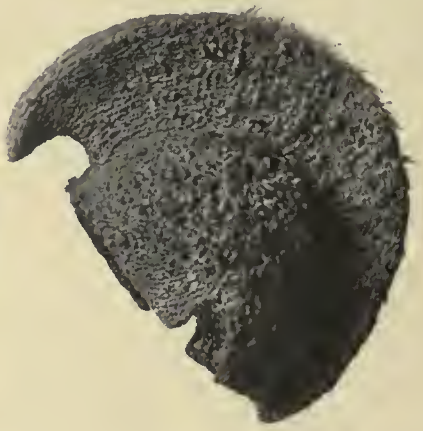

FIG. 34.

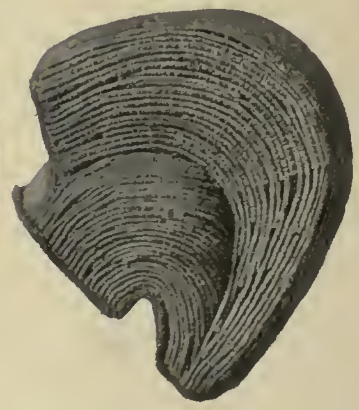

FIG. 35.

2. Mahiole from the Vancouver collection given by the trustees of the British Museum in exchange. Its form is quite different from the last, as may be seen in Fig. 2, p. 5. Bands of red iiwi, green ou and yellow oo, nearly obliterated by long neglect, must have made this a very conspicuous ornament of some Hawaiian warrior. The double plaited crest would have resisted a powerful blow. Height, 11 inches; width, 7¾ inches; depth, 9 inches. Museum No. 958. The attachment of the feathers is directly to rods, on one side of which they are bound much in the way feathers are bound to leis. The frame of the helmet is as usual of ie-ie basket work, and to the top of the crest no less than eighteen of the rods are fastened, while the sides of the crest have twelve: on the body of the helmet the varying curvature is followed by long or short rods. The succession of colors from the front is red, green, red, black, yellow. A narrow border of black and yellow follows the edge.

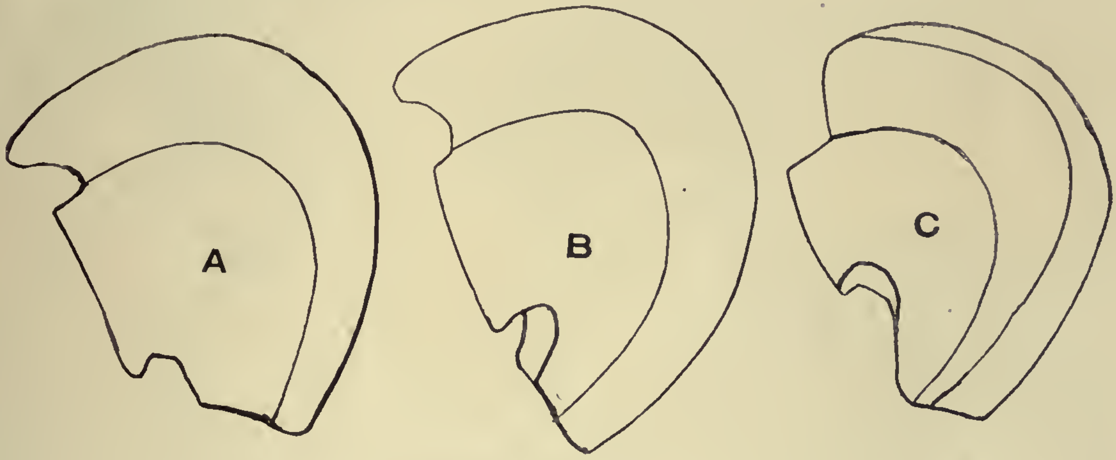

FIG. 36. OUTLINES OF HELMETS IN THE BERLIN MUSEUM.

3. Mahiole from Cook's collection, now in the k. k. naturhistorische Hofmuseum, Vienna: red, with yellow crest; few feathers remaining. The front of the crest is set rather farther back than usual. Fig. 33.

4. Mahiole from the same collection and now in the same depositary. The body is green and the crest red and yellow, although few feathers remain. Fig. 34.

5. Mahiole also from Cook collection and with the others at Vienna. No feathers now remain, although originally it was covered in the manner of No. 2. The disposition of the covering rods is shown in the illustration, Fig. 35.

6. Mahiole of red, except the yellow top of crest and a narrow black and yellow line at the juncture of the body and crest and along the border. This helmet is rather soiled, but in a good state of preservation. Nationalmuseet, den Ethnografiske Samling, Copenhagen. ("Fjerkappe og Hjoelm" on the label.) The statement in the excellent handbook, which is in Danish, that the "Kongens Kappe var forabejdet alene

af gule Fjer,"—the King's helmet is all of yellow feathers,—while those of the upper chiefs are of red with a yellow border, is without foundation.

7. Mahiole of red, with the usual yellow crest, with one black stripe on the right side at base of crest, and two on the left side. Feathers mostly gone. The form is shown in A of Fig. 36. Now in the museum für Volkerkunde, Berlin.[29]

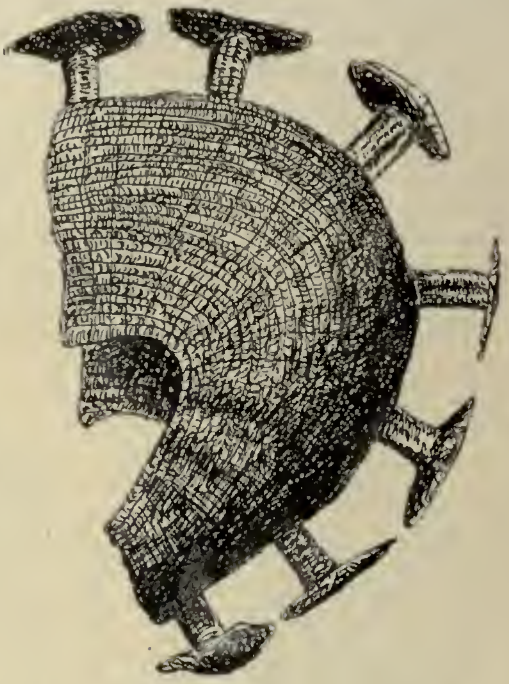
FIG. 37. HELMET IN BERLIN MUSEUM.

8. Mahiole with traces of feathers in the same collection. Fig. 36, B. In both this and the next the rod structure was used, and it is so general that I am inclined to think that when the net or *nae* was used it was because of a plentiful supply of torn or otherwise disfigured capes.

9. Mahiole of the rod structure and traces of feathers. Fig. 36, C. Also in the Berlin Museum.

10. Mahiole of most interesting structure, but showing no traces of feathers at present. The usual plaited cap of ie-ie is surmounted, in place of the common crest, by seven neatly plaited projections like rude umbrellas with tops some two inches across. These are shown in Fig. 37, and I suppose them to have been the base of plumes.

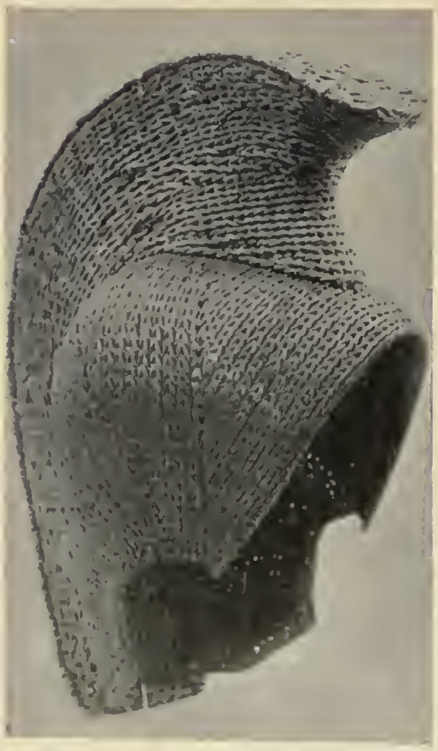
FIG. 38.

11. Mahiole without feathers; in the Cook collection of the Australian Museum in Sydney. This was in the collection of relics of the great explorer purchased by the New South Wales Government from the family of Cook. The structure differs from those before noted and is a braid in three sections. An illustration, Fig. 38, I owe to the kindness of Mr. R. Etheridge, Jr., the distinguished Director of the Australian Museum.

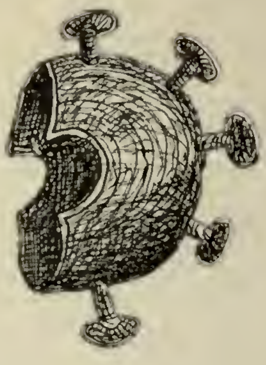
FIG. 39.

12. Mahiole of the ordinary form; red, with yellow crest; feathers well pre-

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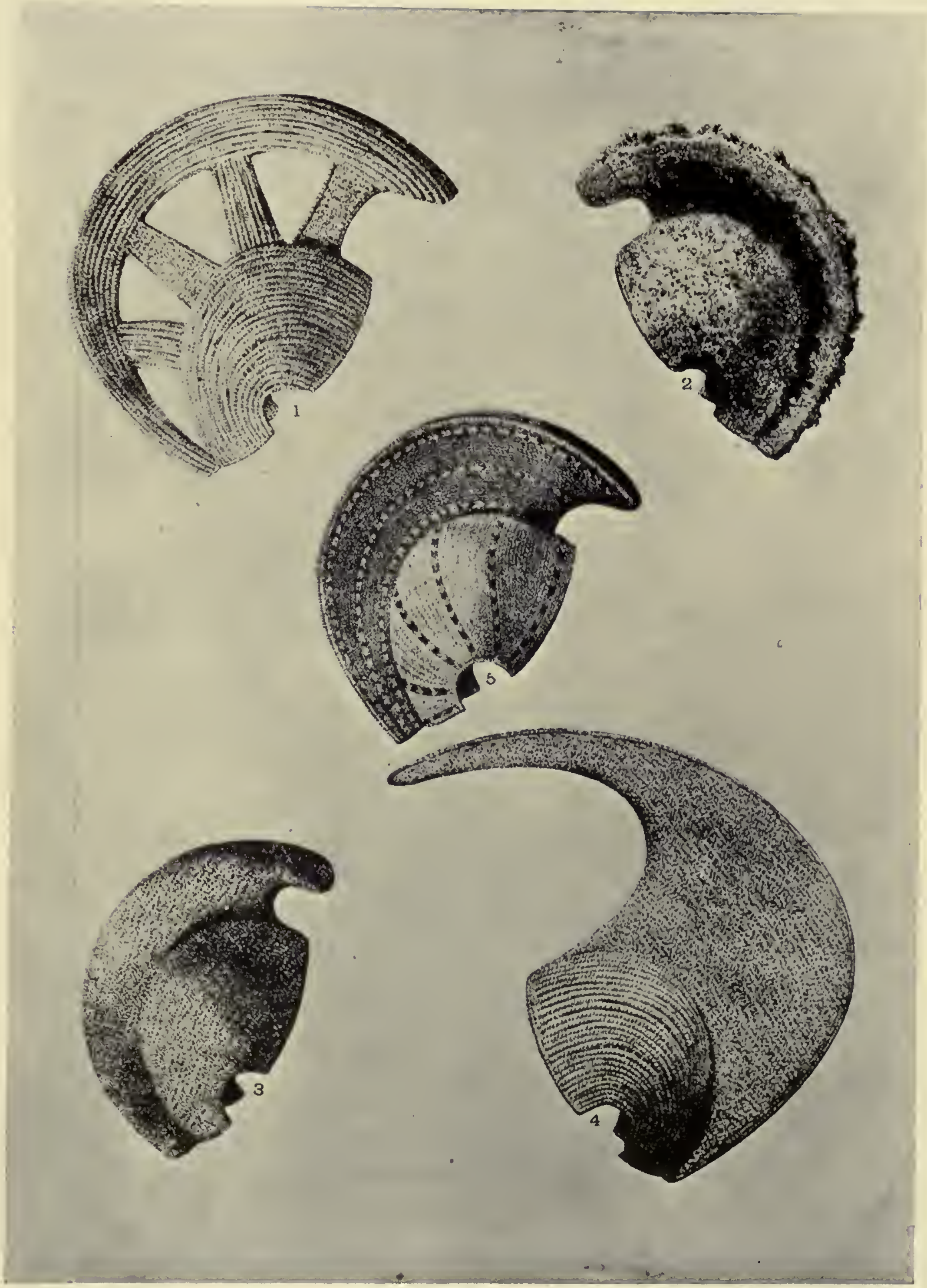
[29] This and the three following have been figured by Dr. von Luschan in *Fremder Einfluss in Afrika*, already quoted, and from that publication these outlines have been copied.



HELMETS IN THE SPANISH NATIONAL MUSEUM.

served. Given to Berne by Wäber, the Bernese artist of Cook's last voyage; now in the Municipal Museum of that city.

13. Mahiole; black, with yellow crest, on a figure supposed to represent a Hawaiian in the Musée d'Artillerie, Galerie d'Ethnographie at the Hôtel des Invalides, Paris. If I am rightly informed, this figure is a *réplique* of one in the Jardin des Plantes, but at my last visit to that wonderful collection the ethnological specimens were being rearranged in new galleries and I was unable to see them.

14. Mahiole supposed to be in the Jardin des Plantes.

15. Mahiole without feathers, but with five pins of the same class as already seen in No. 10. This is figured in the Voyage of Freycinet,[30] Plate 90. Guimard. Fig. 39.

16. Mahiole of red feathers, with a yellow crest raised from the cap by interlacing arms. Attributed to Legoarand; now in the Musée de Marine at the Louvre, Paris.

17. Mahiole of similar structure to the last.

18. Mahiole figured in Freycinet, Pl. 90.

19. Mahiole without feathers, but woven in a very neat and ornamental manner, quite as if no feathers were to cover it. This is in the Army and Navy Museum in the old Whitehall Palace in London, where I was kindly allowed to examine and photograph it. In the character of the weaving it differs from any I have seen.

20. Mahiole with a detached crest supported on four arms and joined to the cap at the base. The first and third arms are of different finish from the others, which with the cap and crest were covered with feathers on rods: none are now visible. This, with the four following, is in the Museo Arqueológico Nacional at Madrid, and shown in Pl. VII., Fig. 1, which I have copied, with correction of positions (which were all incorrect in the original plate) from a sheet sent me by Stewart Culin, Esq., of Philadelphia.

21. Mahiole of ordinary form, partly covered with red, black and yellow feathers. Fig. 2, Pl. VII. Madrid.

22. Mahiole with heavy crest and constructed with ornamented braid, but showing (in the plate) no signs of feathers. On the sides of the crest are three black and yellow stripes, and on the cap six of similar braid. Fig. 5, Pl. VII. Madrid.

23. Mahiole of ordinary form; once covered, apparently, with red feathers on net work. Fig. 3, Pl. VII. Madrid.

24. Mahiole with an immense, high and projecting crest. The cap is covered with the rod structure, while the crest seems to have been covered with feathers attached to a net. As I have not been able to examine personally any of these helmets in the Spanish museum, I am dependent on the drawings of Señor Ternel, which, although apparently exact, do not indicate color. Fig. 4, Pl. VII. Madrid.

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[30] *Voyage autour du monde fait par ordre du Roi sur les corvettes de S. M. Uranie et la Physicienne, pendant les années, 1817–1820. Par. M. Louis de Freycinet.*

25. Mahiole of ordinary form, but with curious projections over the ears not seen in any other. No feathers left. Height, 13 inches; depth, 8 inches. From the Vancouver collection now in the British Museum. Fig. 40, *a*.

26. Mahiole of rather coarse wicker work, with detached crest supported by five round, plaited bars. The ear holes are angular instead of, as usual, rounded. No feathers. Height, 18 inches; depth, 12 inches. Vancouver collection, British Museum. Fig. 40, *b*.

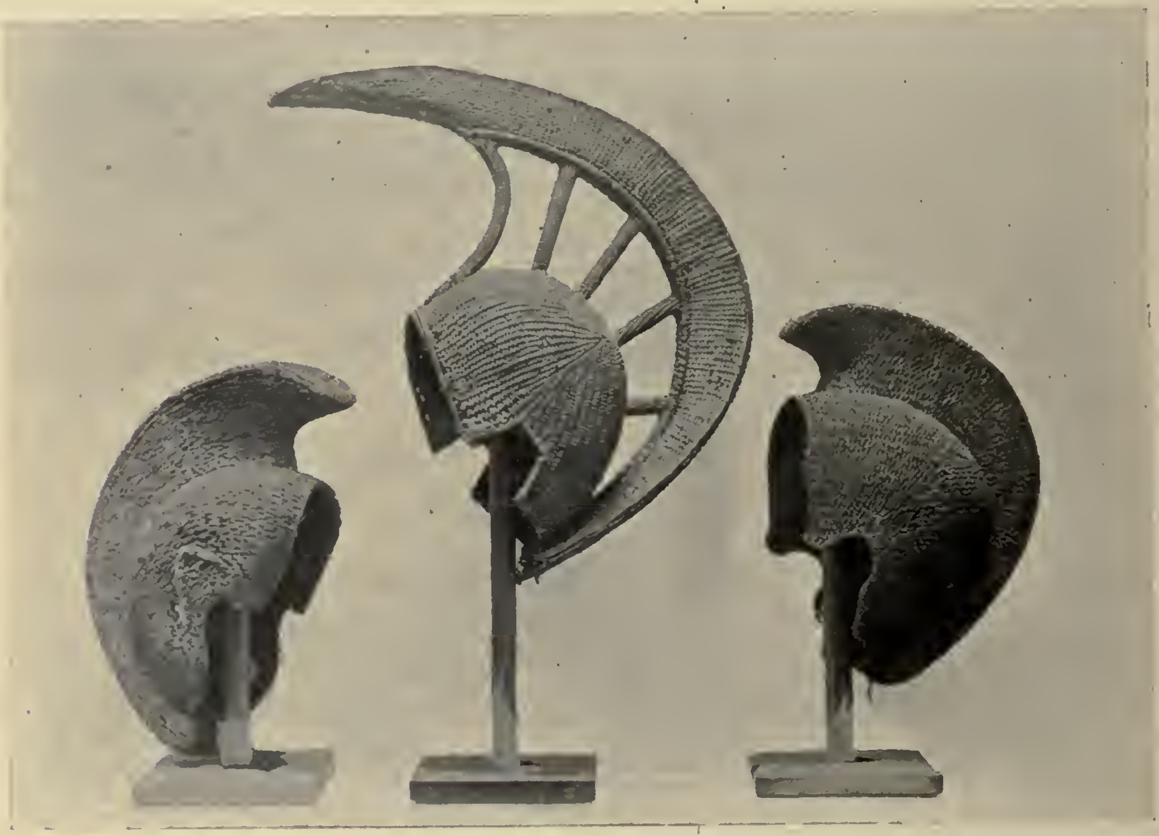


FIG. 40. HELMETS IN THE BRITISH MUSEUM.

27. Mahiole of ordinary form and close woven structure. Height, 13 inches; depth, 12 inches. Vancouver collection, British Museum. Fig. 40, *c*.

28. Mahiole in good preservation; feathers in concentric band of red, black and yellow; yellow crest with prominent feathers, much resembling the one figured in Cook's Voyage, Fig. 32. It is the best one in the British Museum. Fig. 41, *a*.

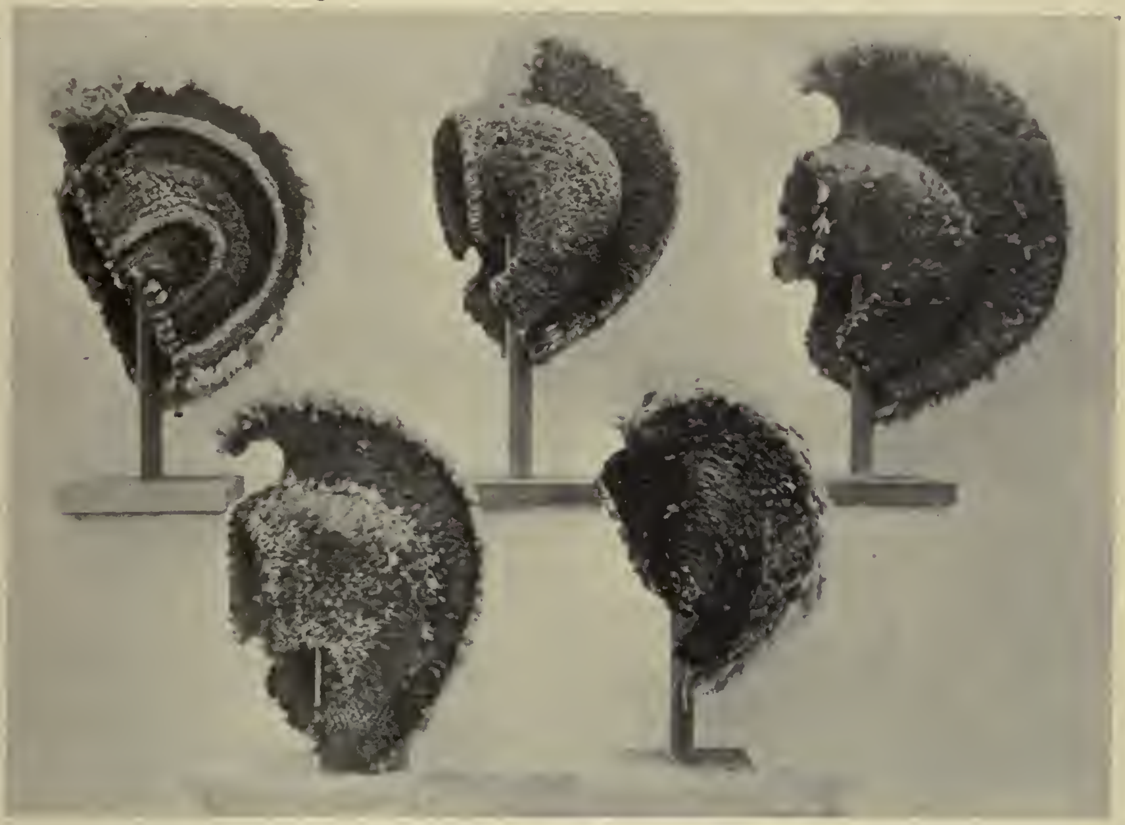
29. Mahiole of form somewhat resembling No. 2. Red, with yellow crest and border. British Museum. Fig. 41, *b*.

30. Mahiole of form similar to No. 1. Red, with yellow crest, and black and yellow border. In good condition. British Museum. Fig. 41, *c*.

31. Mahiole of red feathers and yellow crest attached to a net over a well-made ie-ie frame. The feathers on the body have suffered much, but the crest is in better condition. British Museum. Fig. 41, *d*.

32. Mahiole of rather small size. Red, with yellow top to crest in good condition. British Museum. Fig. 41, *c*.

The last five helmets range in height from 11 to 15 inches. All those in the British Museum were photographed for me by Mr. Henry Oldland, of the Museum staff. One or two of the last five were in the Meyrick collection, but I am unable to identify them from my notes.



a *b* *c* *d* *e*

FIG. 41. HELMETS IN THE BRITISH MUSEUM.

33. Mahiole with detached crest supported by two circular rods. Red, with yellow top to crest, which is edged with black, and with yellow bands around the supporting rods and a border of the same color. This was taken to England by Boki, who accompanied the King and Queen in 1824, but whether left there or brought home and since destroyed is not known. It is well shown in Plate VIII.

34. Mahiole, of which only the wicker work remains in a damaged condition. In the possession of a doctor in Honolulu. A request to be allowed to examine and photograph it was denied.

35. Mahiole of wicker work covered with a net of oloná. To this were originally attached red feathers, those on the crest being yellow, and on the edge black. This, with the next one, was for years attached to the wall in the exhibition hall of the Real Museo in via Romana, and it is not strange that they have little to indicate the color. Dr. Giglioli, who has described them,[31] was able by the use of a lens to make out the remains of color. He says: "Dopo minuzioso esame e coll' aiuto di una buona lente, ho potuto constatare, scoprendone gli avanzi, che il corpo di questo mahiole era in origine coperto di penne rosse della iiwi, mentre la cresta lo era colle penne gialle dell'oo; lo spazio intorno alle intaccature per le orecchie era coperto di penne nere, pure tolte all'oo; mentre l'orlo intorno all'apertura dell'elmo era guernita di penne rosse, gialle e nere."

36. Mahiole without feathers, in form of No. 2, and like that, covered with rods to which are still attached the oloná threads that held the feathers. This and the preceding are in the Real Museo di Fisica e Storia Naturale at Florence.

37. Mahiole like those covered with feathers, but in this human hair covers the wicker work frame in the guise of a wig. The crest (mahiole) is of bleached and longer hair, while the rest is of a brownish hue. This was used in war, possibly a trophy from some vanquished enemy, and belonged to the mother of Queen Emma. It is now in the Bishop Museum. [B. M. No. 124.] It should certainly be noted that this helmet of human hair was not of so strong and firm a wicker work as most of those to which feathers were added, and they seem more for ornament (or disguise) than for protection.

I have not been able to trace other helmets adorned with human hair, although assured by old natives that the fashion was genuine Hawaiian. It was customary in the southern islands, especially Fiji, to wear a wig made of the hair of an enemy, especially if that enemy had been eaten; and one of these from a man who was eaten in 1862 is in the Bishop Museum. [B. M. No. 2026.]

38–41. Since the above was in type word has come that four mahiole, two of them with feathers, formerly in the Boston Museum, have been given to the Peabody Museum of American Archæology at Cambridge, Mass. It is well that they have ceased to be mere curiosities, and have become objects of ethnological interest.

Here then are more than forty of the fine Hawaiian helmets still preserved in museums, and it is not improbable that a few more are in private collections unknown to me. Of all these the one in best condition and exhibiting the full splendor of its original state is the Kaumualii helmet in the Bishop Museum, which I have placed at the head of the list. There is many an imposing panoply in the royal armories of Europe. I have seen them at Vienna, Turin and elsewhere, but the Hawaiian warrior clad in the superb bone and flesh of the olden day and decorated with the helmet and

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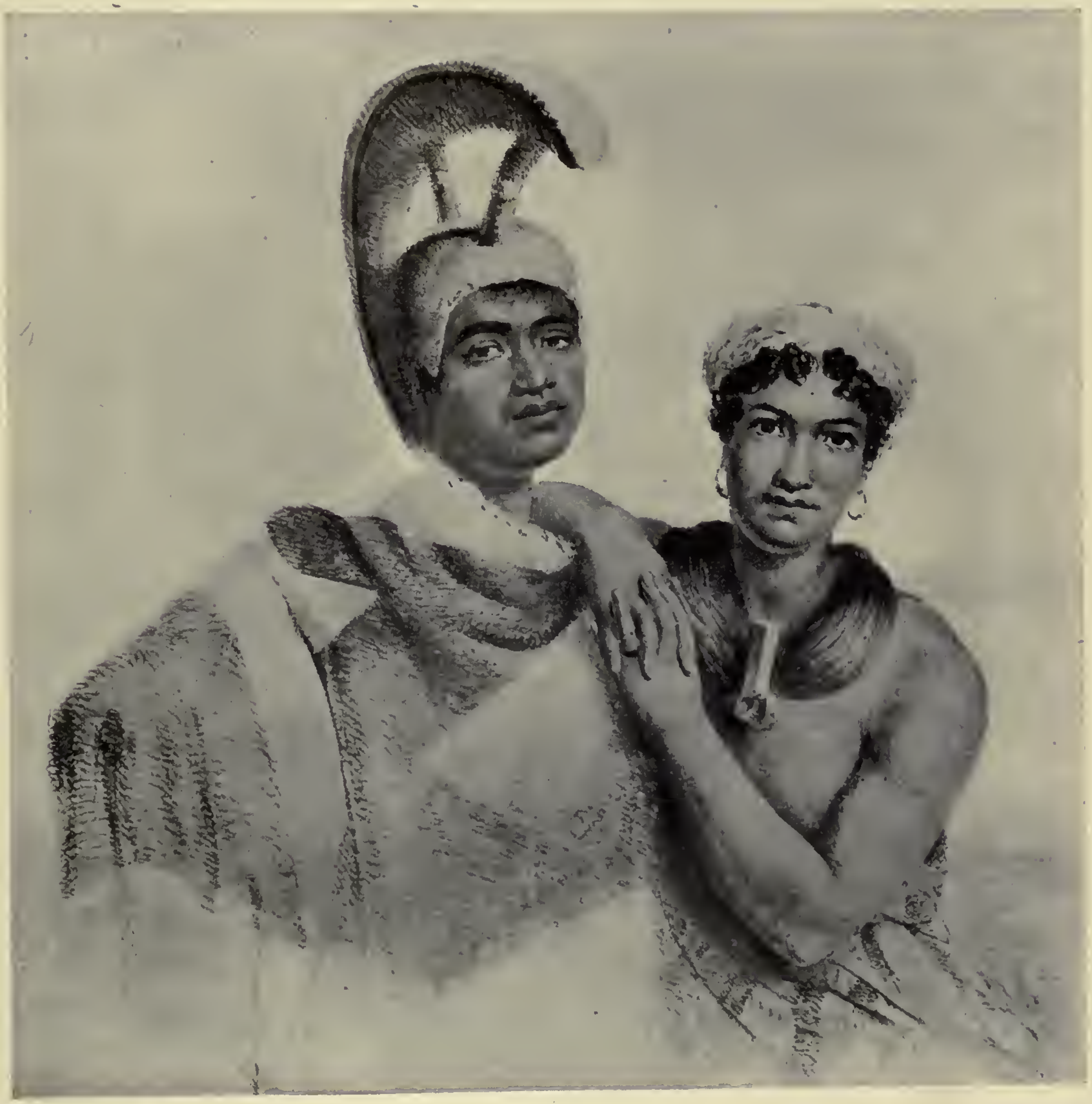
[31] *Appunti intorno ad una Collezione Etnografica fatta durante il terzo viaggio di Cook e conservata sin dalla fine del secolo scorso nel R. Museo di Fisica e Storia Naturale di Firenze*, p. 79. Studio del Prof. Dott. Enrico Hillyer Giglioli. Firenze, 1895. In this valuable essay Dr. Giglioli describes many other Hawaiian specimens, and it will again be referred to when treating of the Hawaiian feather cloaks.



BOKI AND LILIHA.

cloak, not of steel from the earth but of the plumage of the birds of the air, was quite the equal in imposing majesty of any knight of the Holy Roman Empire that ever wielded lance.

But to return to a matter that this fine helmet suggests. It was the cherished armor of a king as noble as any of the Hawaiian line, and yet it is not all yellow, as one or two authors claim that the helmet of a king should always be: it is of red, as are the most of those which retain any of their original feathers, and not a single one of all is exclusively yellow.

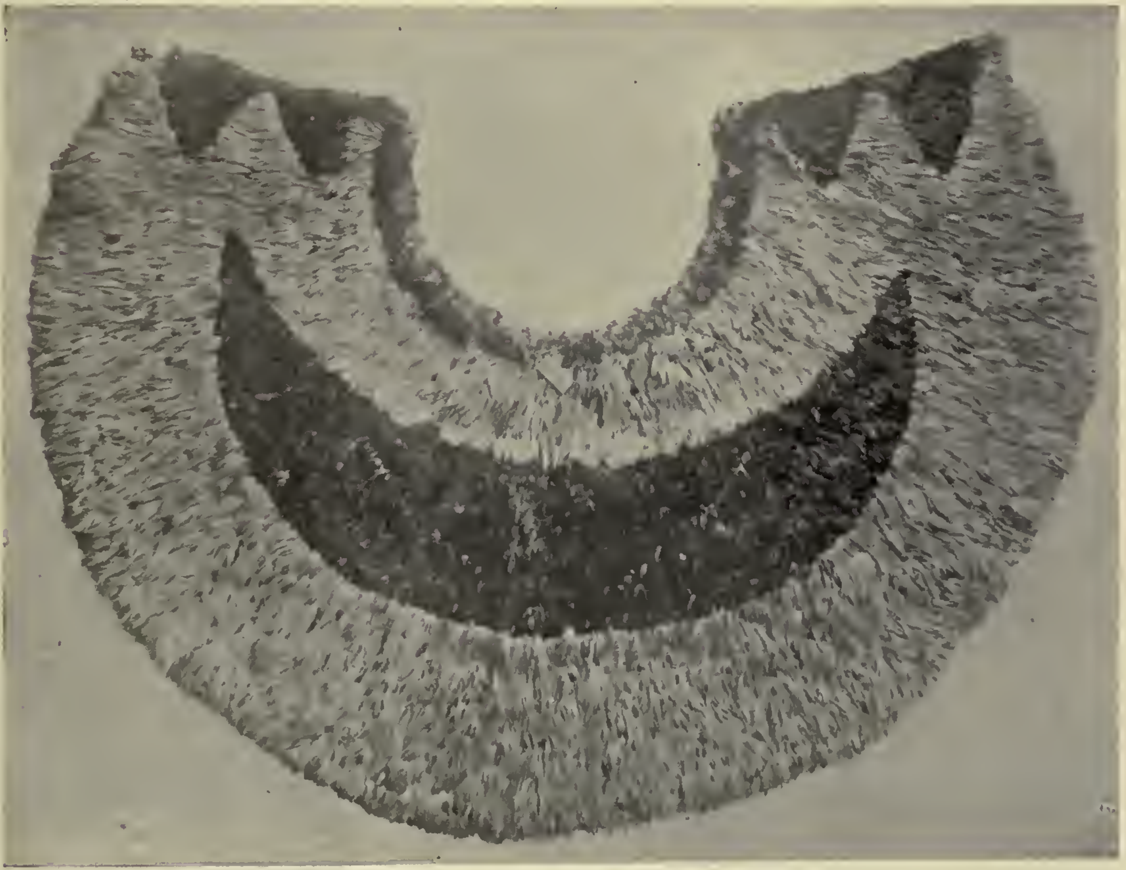


FIG. 42. SMALL FEATHER CAPE.

AHUULA OR FEATHER CLOAKS AND CAPES.

Of all the Hawaiian feather work that has come down to us that comprised under the above heading is not only the most abundant but also the most beautiful. It is durable, of comparatively small bulk, and easily cared for, while its decorative character has caused it to be sought for by the foreigners who have visited Hawaii. The generous Hawaiian chiefs often made ahuula a token of their friendship, and so feather capes or cloaks have made their way to America and Europe, and have been gradually gathered into museums until there is not a large ethnological museum that cannot show a specimen of some quality. It will be seen from the list subjoined from how many localities the information has been gathered, and although the number is great, I cannot believe that I have been able to track all that still exist. It is hoped that the publication of this list, even incomplete, will lead to the discovery of more that may be hidden in private cabinets or in the museums of small towns.

Oloná is so universally the basis of Hawaiian feather cloaks, that feathers mounted on any other substance would be at once classed as foreign to the group. This fibre comes from *Touchardia latifolia*, a Hawaiian genus of a single species discovered by Gaudichaud. This genus of Urticacæ is closely allied to the better known ramie (*Bœhmeria nivea*), but is even more tenacious and durable. Although not abundant, it is found in deep ravines and well-watered mountain slopes all over the group, and formerly it was cultivated for its fibre much in the same way and places as the fibre plants used for kapa or bark-cloth.

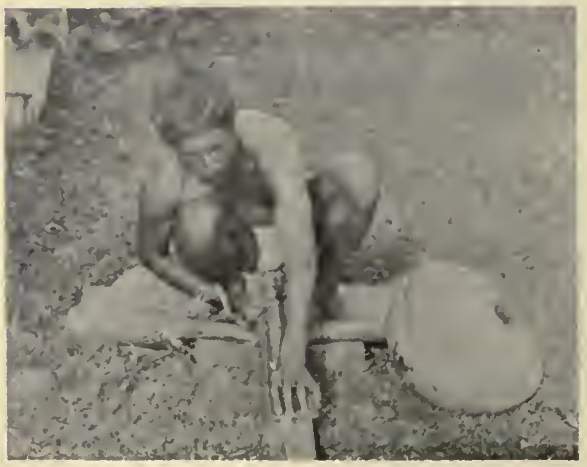


FIG. 43. SCRAPING OLONÁ.

The stripped bark is soaked and then scraped on a long, narrow board (*laau kahi oloná*), with a scraper (*uhi kahi oloná*) made of turtle bone (*kuahonu*) or of pearl shell (*papaua* = *Meleagrina margaritifera*). The hank of fibre is made fast to the small end of the board and the operator places himself over it as shown in Fig. 43. The fibre is easily scraped out, and the spinner then twists it on the thigh using no spindle. Fig. 44. The cord or thread varies greatly in the net used for cloaks, of which specimens are shown in Plates IX. and XI. The Hawaiians, as was the case with other Polynesians, had no looms,[32] even of the rudest sort, and the

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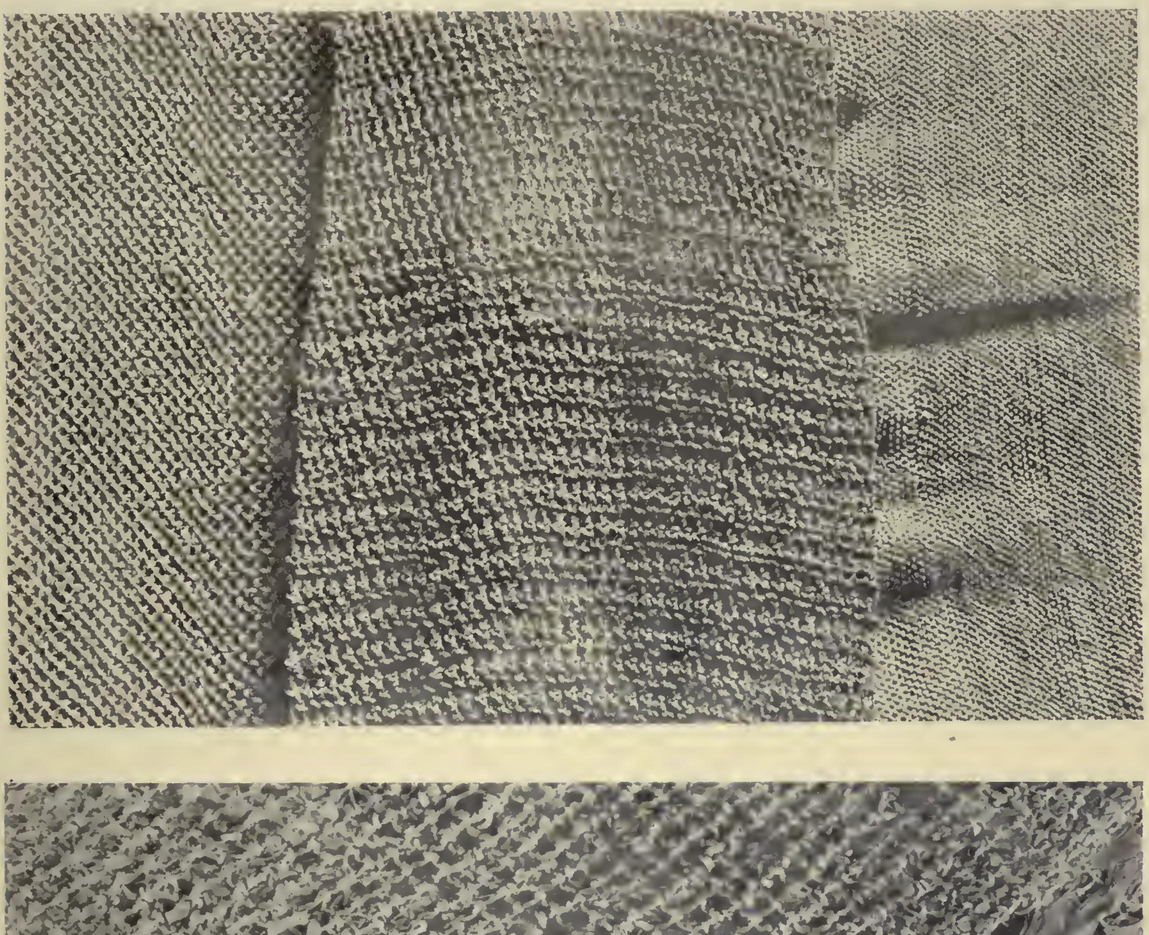
[32] The rude apparatus of the Maori is the nearest approach to a loom that I can recall; and that seems to have either been borrowed from the Caroline Islanders, or perhaps been evolved from the needs of the flax used by the Maori for clothing.



NET WORK USED IN FEATHER CLOAKS.

net or *nae* was formed with a netting needle (*Hia aho ka upena*) of the form common to most peoples and found among the relics of the ancient Egyptians as well as in the grass huts of Hawaii. The fineness of the net varies as does the size of the thread, nor can I find that any particular fineness was peculiar to any time or place; in the same cloak may be found pieces of very varying degrees. The same netted fabric that was used in the making of feather cloaks also served for the *malo* or waistband of chiefs; and one of these very durable dresses, fringed with human teeth (much decayed) is to be seen in the Bishop Museum. [B. M. No. 6921.]

It was common custom to net bands of a width from 8 to 12 inches, and this was cut and joined as the rolls of modern cloth would be used by the shaper. In the cloak of Kiwalaó (Pl. XI.) there are more than thirty irregular pieces thus joined, and in the covering of the Kukailimoku even more cutting and fitting was required.

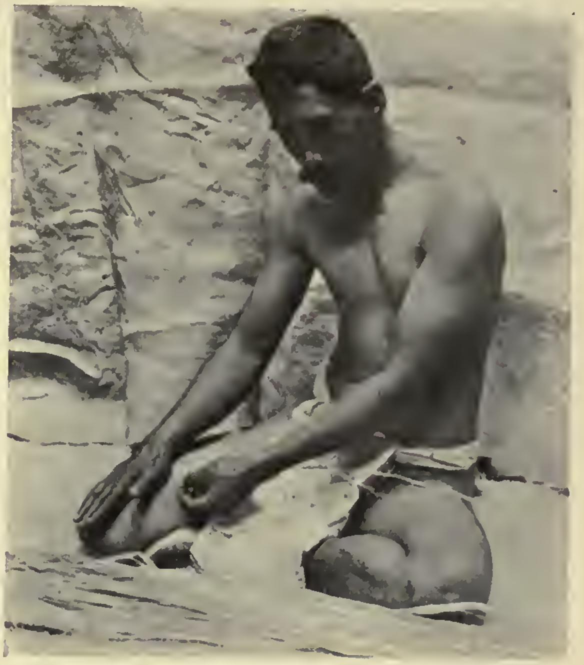


FIG. 44. SPINNING OLONÁ.

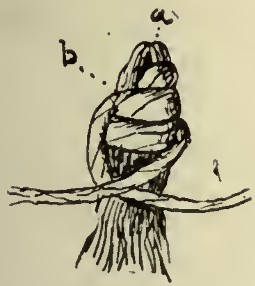


FIG. 45.

To fasten the feathers to this net much finer thread, often single fibres, was used and the feather was bound by two or three turns of the thread in the way shown in Fig. 45. The shaft of the feather was bound by one turn, then bent at *a* and the end *b* bound, by another turn of the thread, to the same or the next lower mesh. This was a very secure method, and the feather could be broken but not pulled out whole. One skilful in attaching the feathers could easily arrange the *pa'u* of the bunch so as to completely conceal the uniting thread which often was of considerable length and passed unbroken down the rows. On the reverse the feathers did not show at all and the thread being of the same material is hardly visible; only when the cloak is much worn, and the net originally of open texture, do the feathers show through, as is the case in Pl. IX., lower figure. When the cloak has been mended in modern times cotton thread is generally used and is very conspicuous. It was generally, if not always, the custom to arrange the feathers in direct rows, and where unevennes is found it is either the result of careless workmanship or of the displacement of the net by age or rough usage. It was important to prevent vertical breaks between rows, while horizontal divisions were desirable for due flexibility, and so the horizontal rows were arranged quincuncially. In many cloaks the feather tufts are so close that it is very difficult to distinguish the knottings, but if placed one-sixth of an inch apart the surface is beautifully covered, and they are sometimes a quarter of an inch apart without breaks in the surface. In some cases the yellow feathers have worn down to the extent of showing the red feathers used for the pa'u, and even then the knotting is hardly visible.

It is often stated that a cape in time becomes a cloak as the owner's means or rank increase; that is, strips of network are added by a sort of exogenous growth; but I have not found this to be the case. The garment seems to be designed originally for a certain size which cannot be greatly increased without disturbing the balance. And this brings us to a consideration of the usual patterns. No great originality has been shown, and the elements are generally triangles and crescents which in a flat design seem rather commonplace, but when it is remembered that the folds of the cloak when worn greatly modify the geometrical arrangement of the triangles, whether plain or spherical, it must be admitted that the simple designs are admirably adapted to the purpose of decoration. An inspection of the diagrams in the following list of *ahuula* will show that, while there is no great variety, no two were exactly alike: it is only in the modern copies made of dyed feathers, or even of suitably colored cloths, that repetition occurs.

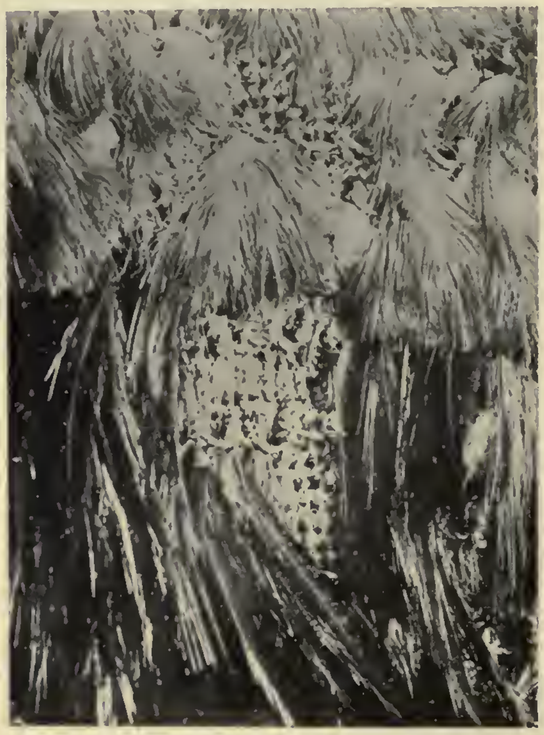


FIG. 46. KNOTTING OF A CAPE.

I have been told by aged Hawaiians that the pattern was sketched on white kapa, cords of oloná or coconut fibre serving as radii of the curves which are generally arcs of circles, but I have never seen any of these kapa patterns; and indeed as they were never duplicated they would not be preserved. There does not seem to have been much freehand sketching in this feather composition, and although in several designs irregularities appear these are due probably to careless following of the pattern and not to artistic freedom on the part of the designer.

There is nothing of the delicate variety and minute figures of the Mexican mosaics; the figures were all broad and even coarse, but in that were all the better suited to the purpose intended, for it must be borne in mind that the primary use of the Hawaiian feather cloaks was war-like decoration. They were a refined "war-paint." As in mediæval Europe the vanquished knight was despoiled of his armor by the victor, so the chief who killed or captured his enemy took as spoils his feather cloak, helmet or lei. It then became a trophy and a thing to be displayed on public occasions to the conqueror's fellows, and this use is still retained, in a modified form, among the Hawaiians. In the latest royal funeral, that of the lamented Kapiolani, widow of Kalakaua, feather capes were displayed to mark rank, if not a more bloody conquest.

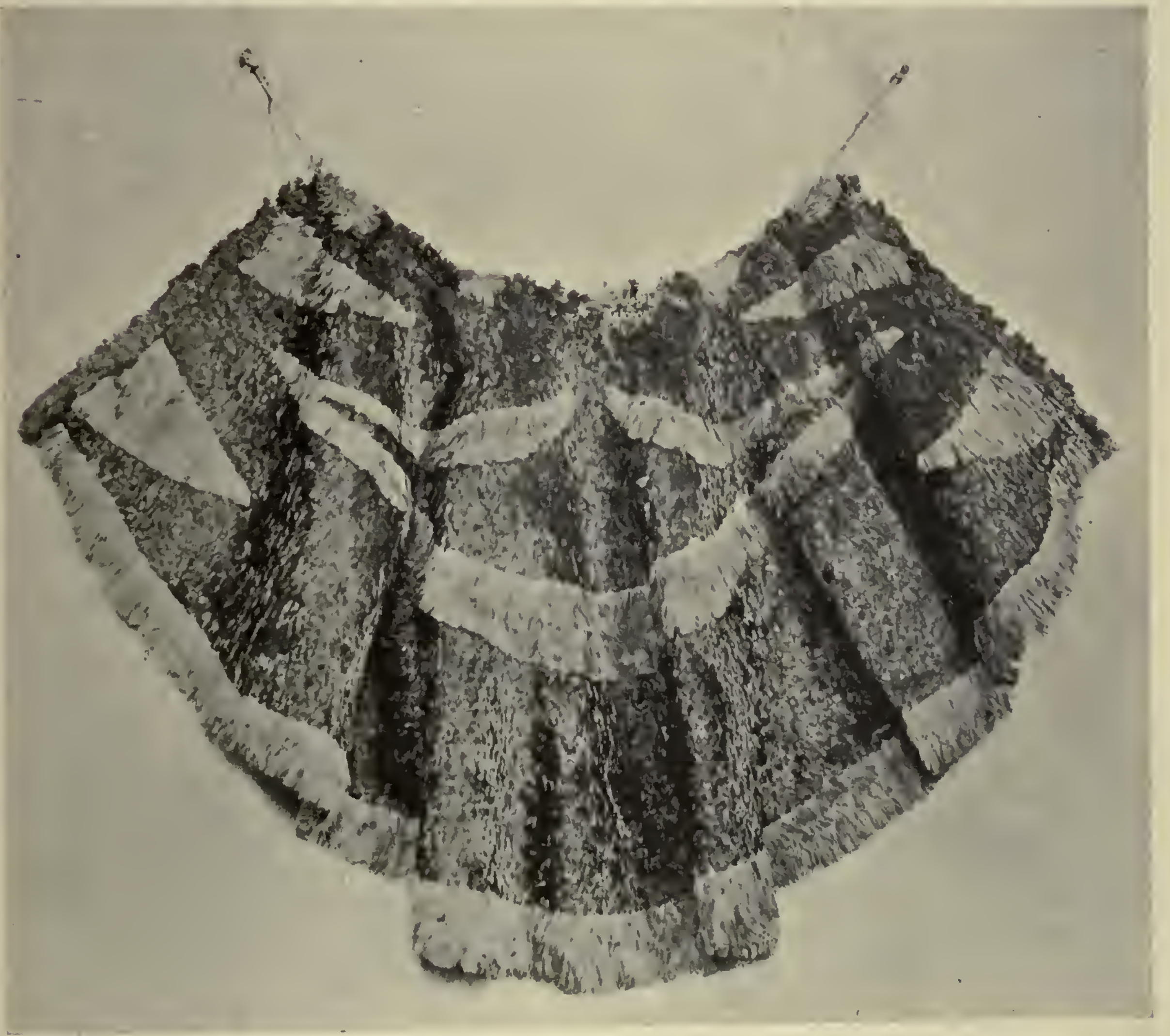


FIG. 47. FEATHER CAPE.

Few of the ahuula still extant but have passed from owner to owner by violence in the olden time, by the generosity for which the Hawaiian is noted in the days succeeding the conquest of the Islands and the cessation of wars.

In wearing cloak or cape the usual fastening was a firmly braided collar of oloná fibre continued at the upper corners of the garment into cords of square braid long enough to tie securely, or to make into such a knot as to readily permit escape, if exigencies required, at the cost of the cloak. In a few cases tags of feather work were attached at intervals to the front edges to wrap the cloak closer to the body, but usually, as the wearer required free exercise of his arms, the attachment around the neck was the only one. In modern times silk ribbons have been substituted for the original cord in many cases. A feather cloak was very warm, but as it was worn without underclothing of any sort,—in battle ancient Hawaiians generally omitted even the *malo* or waistcloth,—it was possible to avoid overheating. The weight of the large cloaks was considerable owing to the firm netting of the substructure.

The impression is prevalent in foreign countries that a register was kept by the chiefs, and later by the Government, of all royal feather robes. This was not the case.

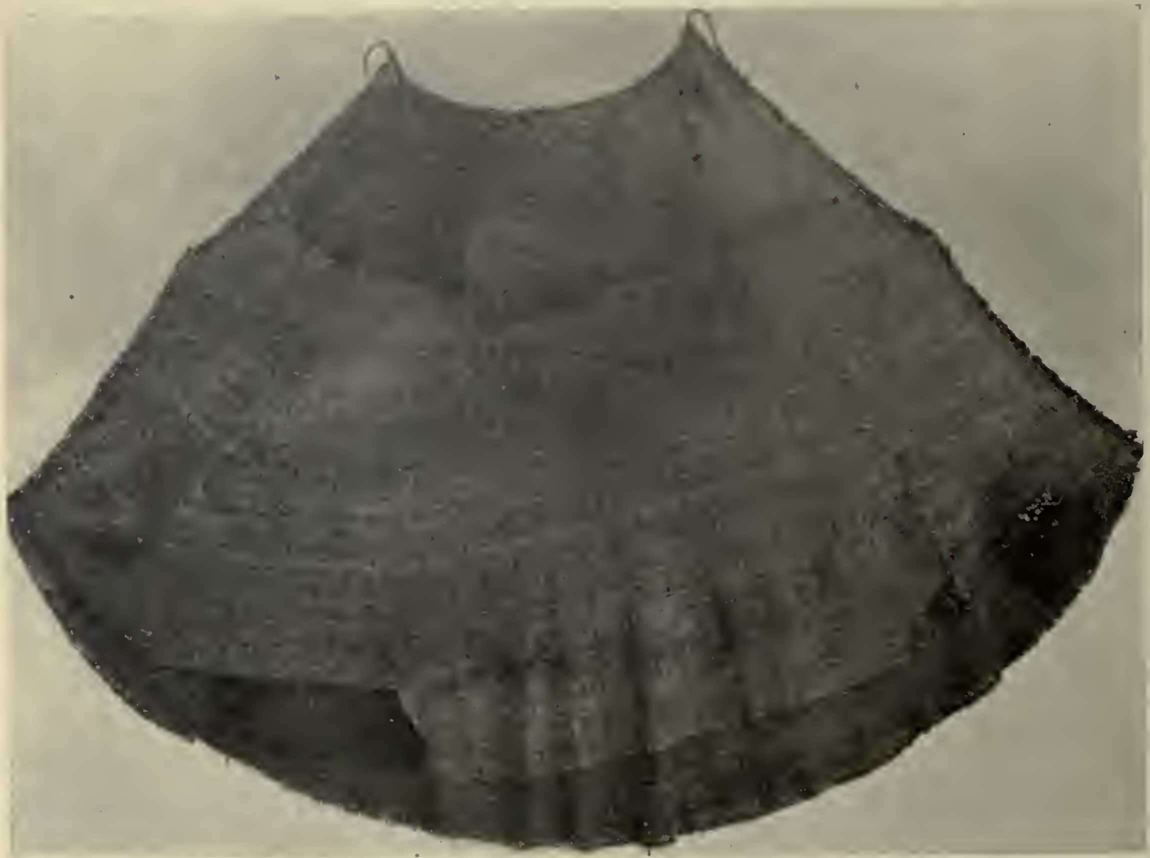
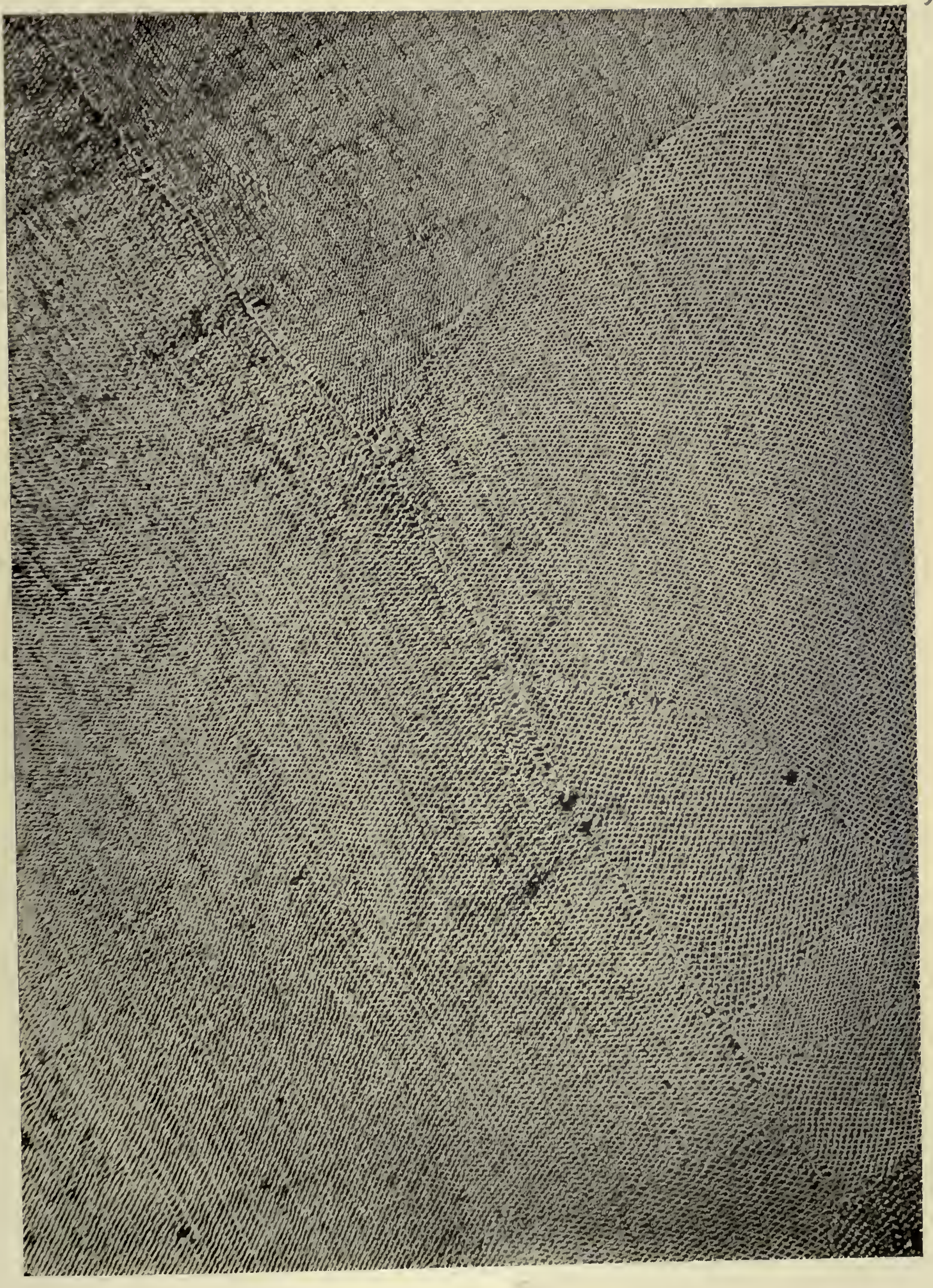


FIG. 48. THE BACK OF THE CAPE OF KIWALAÓ.

Not only did the Hawaiians have no written language until in 1820 the American missionaries introduced letters and adapted them to the sounds of the spoken language, but there were no known traditions referring to any particular ahuula in other than the most general terms.

The list that follows this brief description is the only one that has ever been compiled, and although efforts have been unsparing to make it as complete as possible, other ahuula are known to exist here whose owners are not willing to have them seen, still less examined or figured. In pleasant contrast is the kind assistance rendered by



NET WORK OF THE CLOAK OF KIWALAÓ.

many friends abroad who have photographed or made sketches in color of specimens I have been unable personally to examine, or have put me in communication with owners of specimens not in public museums.

It may seem strange that articles so highly valued should have so little history connected with them. To most of us it would add greatly to the interest which must ever attach to these beautiful examples of patient and long-continued work by a primitive people if we knew what chief first ordered the construction, how long the hunters collected, how many years the deft fingers of the high chiefesses plaited the precious feathers into the network, what rejoicings at the completion of the long task, in what battle it first was worn, and then the changing ownership when murder, fraud, or theft transferred the garment; or when, in rarer cases, the owner gave the rich gift to a well-loved friend; or, dying, left the ahuula to his heirs. But the native meles and kaaos, while attesting the antiquity of the manufacture, are not explicit enough to permit the identification of any one specimen; as to the pattern and size, "aole i oleloia ma na kaao kahiko o ko o nei poe kanaka—it is not told in the ancient legends of this people."

Imagination and arithmetic are not usual yoke-fellows, but one can count the number of feathers to the square inch and multiply by the area of the cloak, then divide by the average number of the feathers from each bird: imagination must then compute the time taken to ensnare a bird and the farther time to attach the feathers to the cloak. There are those who are amused with such calculations, and they have stated that in the case of the great *mamo* cloak of Kamehameha (the first in the following list), if paid for at the rate of wages ruling at the end of this nineteenth century, a million dollars would hardly pay the bills for the work done by the makers of that cloak at the beginning of the eighteenth century. I have not repeated their figuring and I cannot adopt the result as my own, but imagination may be trusted when it tells us that the time was great and the labor enormous before the predecessors of Kamehameha could display this cloak on their broad shoulders. I do not care to reduce the result of so much good work to mere dollars and cents. In the march of time and civilization they have become to most men mere curiosities, while to a few they are precious documents telling most honorable stories of a time and civilization long past.

As curiosities the market for Hawaiian feather work shows curious fluctuations. I have been asked $10,000 for a cloak of no extraordinary beauty or condition: the Hawaiian Government purchased a larger and finer one at auction for $1200: and another of the same size was bought in London for $125. A small cape, from its perfection of workmanship and complete preservation, I have valued at $600. It is safe to say that the prices asked for the few specimens now in private hands are preposterous.

LIST OF HAWAIIAN AHUULA.

1.	Mamo of Kamehameha.		Bernice Pauahi Bishop Museum.	Honolulu.
2.	Cloak of Kiwalaó.	Photograph.	" " " "	"
3.	Cloak of Kalanikauikalaneo.	"	" " " "	"
4.	Pa'u of Nahienaena.		" " " "	"
5.	Cloak with no history.	Photograph.	" " " "	"
6.	Cloak with no history.	"	" " " "	"
7.	Cape, Peterson family.	"	" " " "	"
8.	Cape, Princess Pauahi.	"	" " " "	"
9.	Cape, Queen Emma.	"	" " " "	"
10.	Cape, Queen Emma.	"	" " " "	"
11.	Cape, Gilman.	"	" " " "	"
12.	Cape, A. B. C. F. M.	"	" " " "	"
13.	Cape, Boston.	"	" " " "	"
14.	Cape, Judd.	"	Chief Justice A. F. Judd.	"
15.	Cape, Haalelea.	"	Mrs. Haalelea.	"
16.	Cloak, Kapiolani.		Heirs of Kapiolani(?).	"
17.	Cloak, Lunalilo.		Lunalilo Mausoleum.	"
18.	Cloak, Queen Victoria.	Photograph.	Windsor Castle.	Windsor.
19.	Cloak, Queen Victoria.	"	" "	"
20.	Cloak, Queen Victoria.	"	" "	"
21.	Cape, Queen Victoria.	"	" "	"
22.	Cloak, Wäber.	Sketch.	Municipal Museum.	Berne.
23.	Cloak.	Water-color.	British Museum.	London.
24.	Cloak.	"	" "	"
25.	Cloak, cock's feathers.	"	" "	"
26.	Cape.	"	" "	"
27.	Cape.	"	" "	"
28.	Cape.	"	" "	"
29.	Cape.	"	" "	"
30.	Cape.	"	" "	"
31.	Cape, Vancouver.	"	" "	"
32.	Cape, cock's feathers.	"	" "	"
33.	Cape, cock's feathers.	"	" "	"
34.	Cape.	"	" "	"
35.	Cape.	"	" "	"
36.	Cape.	"	" "	"
37.	Cape.	Sketch.	" "	"
38.	Prayer carpet(?).	Photograph.	" "	"
39.	Prayer carpet(?).	"	" "	"
40.	Cape, Bingham.	"	Bingham family.	Honolulu.
41.	Cloak, Aulick.	Water-color.	U. S. National Museum.	Washington.
42.	Cape, Bolton.	"	" " "	"
43.	Cape, Welling.	"	" " "	"
44.	Cloak, Chapman.	"		Philadelphia.
45.	Cape.	Sketch.	Public Library.	Pittsfield, Mass.
46.	Cloak.	"	Ethnological Museum.	Berlin.
47.	Cape.	"	" "	"
48.	Cape.	"	" "	"
49.	Cloak.	"	National Museum.	Copenhagen.
50.	Cape.	"	" "	"
51.	Cape.	Sketch.	National Museum.	Copenhagen.

52.	Cloak, Lucas.	Photograph.		London.
53.	Cape, Christy.	"	British Museum.	"
54.	Cloak, Kelley.	"		"
55.	Cape.		Public Museum.	Maidstone, England.
56.	Cloak, Pomare.		Brassy Museum.	London.
57.	Cloak, Kearny.	Photograph.	Kearny family.	New York.
58.	Cloak, Joy.	"	Art Museum.	Boston.
59.	Cape, Joy.	"	" "	"
60.	Cloak.		Musée d'Artillerie.	Paris.
61.	Cloak.	Photograph.	Public Museum.	Saffron Walden, Eng.
62.	Cloak.		" "	Ipswich, Eng.
63.	Cloak.	Sketch.	Ethnological Museum.	Leiden.
64.	Cape.	"	" "	"
65.	Cloak, Cunningham.	Photograph.	Mrs. Curran.	Englewood, N. J.
66.	Cape, Cook.	"	Royal Museum.	Florence, Italy.
67.	Cape, Cook.	"	" "	" "
68.	Cape.		Ethnological Museum.	Munich.
69.	Cape, Cook.	Sketch.	Austrian Hofmuseum.	Vienna.
70.	Cape.	"	" "	"
71.	Cape.	"	" "	"
72.	Cape.	Photograph.	University Museum.	Göttingen.
73.	Cape, Cook.	"	Australian Museum.	Sydney, N. S. W.
74.	Cloak [in rags].			New York.
75.	Cape, Lee.	Photograph.	Private hands.	"
76.	Cloak.	Sketch.	" "	New Zealand.
77.	Cloak, Robeson.		(?)	United States.
78.	Cape, Whitney.		Heirs of Kapiolani (?).	Honolulu.
79.	Cloak.		National Museum.	Lisbon.
80.	Cape.	Photograph.	Mrs. Haalelea.	Honolulu.
81.	Cape.	"	" "	"
82.	Cape [net only].	"	" "	"
83.	Cloak.		Private hands.	London.
84.	Cape.		" "	"
85.	Cape, Queen Victoria.	Photograph.	Windsor Castle.	Windsor.
86.	Cape, Queen Victoria.	"	" "	"
87.	Cape, Queen Victoria.	"	" "	"
88.	Cape, Kapena.	"	Leihula.	Honolulu.
89.	Cape.	"	Mrs. Manuel Reis.	"
90.	Cape.	Sketch.	British Museum.	London.
91.	Cape, Starbuck.	Photograph.	Miss Starbuck.	Bath, Eng.
92.	Cape.	"	Colgate.	Kent Lodge, Eastbourne, Eng.
93.	Cloak.	"	"	" " " "
94.	Cape.		Peabody Museum.	Cambridge, Mass.
95.	Cape.		S. Parker.	Honolulu.
96.	Cape.		Heirs of Kapiolani (?)	"
97.	Cape.			Elgin, Eng.
98.	Cape.			York, Eng.
99.	Malo.		Liliuokalani.	Honolulu.
100.	Cape.			Cambridge, Eng.

[In the compilation of this catalogue the author desires to state that he was first assisted by his friend Professor Otis T. Mason, of the United States National Museum, who kindly placed at his disposal all the material he had himself collected, including water-color drawings of the specimens in his charge. Acknowledgments are also due to his friend Mr. J. Edge-Partington for capital water-color drawings and measurements of the cloaks and capes in the British Museum. And to many other friends, Directors and Curators of museums are thanks due for hearty and substantial aid in gathering together the scattered remains of the patient and toilsome work of the ancient Hawaiians. In the diagrams of the ahuula given below the three colors yellow, red and green are represented conventionally, the two colored plates giving the tone, which is the same in all except the mamo. The key to these colors is found in Fig. 49. The drawings have been made from the actual specimens during a hurried visit to the Ethnological museums of Europe and America, or from photographs sent from private collections or museums not visited, and they will at least serve to identify the specimens.]

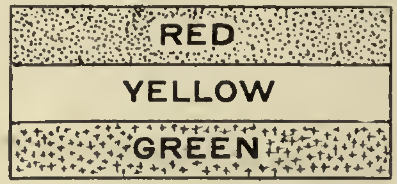


FIG. 49. DIAGRAM OF COLORS.

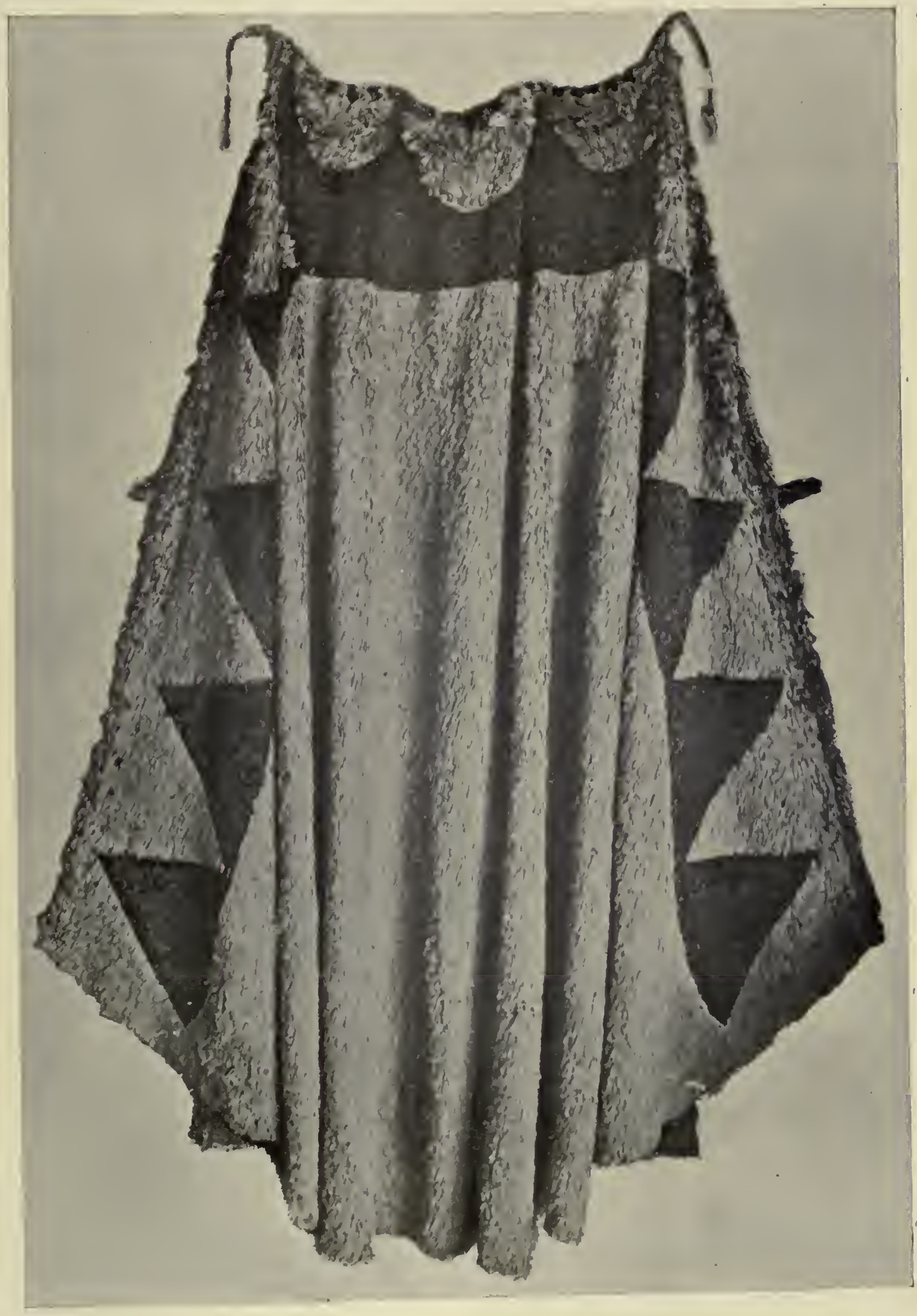
1. This magnificent cloak, made entirely of the feathers of the mamo (*Drepanis pacifica*), may well be placed at the head of the list, as it is not only in superb condition but, so far as is known, is the only one of its kind in existence. It is the historical cloak once belonging to the great Kamehameha, and to the last days of the Hawaiian monarchy it was used to decorate the throne on public occasions, long ofter it ceased to be worn as a robe of honor. When its fabrication began neither records nor tradition clearly tell, but there can be little doubt that some of its feathers were plucked during the seventeenth century and the unfinished work ceased in the last quarter of the succeeding century. It is believed to have belonged to the ancestors of the king Kalaniopuu who was king of Western Hawaii during Cook's visit, and from him the young Kamehameha inherited the insignia with his portion of the kingdom. The late J. J. Jarves, Historian and Art Critic, in describing this cloak[33] says:

> "His Majesty Kauikeaouli has still in his possession the mamo or feather war-cloak of his father the celebrated Kamehameha. It was not completed until his reign, having occupied eight preceding ones it its fabrication ...... A piece of nankeen, valued at one dollar and and a half, was formerly the price of five feathers of this kind. By this estimate the value of the cloak would equal that of the purest diamonds in the several European regalia, and including the price of the feathers, not less than a million of dollars worth of labor was expended upon it at the present rate of computing wages."

On the neck border are a few iiwi feathers, and the present border of purple velvet dates from the reign of Kalakaua. The length is 56 inches; front edges, 46 inches; width at base, 148 inches; weight, 6 pounds. The nae or net of oloná is close, uniform, of a dozen horizontal strips with several triangular pieces, and in perfect condition. Given to the Bishop Museum by Legislative enactment. No. 6828.

2. Cloak of oo (*Acrulocercus nobilis*) decorated with triangles of iiwi (*Vestiaria coccinea*). Plate X. This is of the same age as the preceding and belonged to Kiwalaó, son of a Kalaniopuu, and a brave warrior, slain by Kamehameha who thus obtained the cloak. In late years it has been called "the Queen's Cloak" and has been

[33] *Hawaiian Spectator*, II., 364 [July, 1839].



CLOAK OF KIWALAÓ.

placed over the Queen's throne on public occasions. Length, 60 inches; width at base, 144 inches; front edges, 50.7 inches. The nae is composed of more than thirty pieces, of irregular form and varying fineness, Fig. 48, and the cloak seems to have been made up of the ruins of many other fabrics much as the choice products of Kashmir are fitted piece to piece of many an ancient shawl. The network is shown on a larger scale in Plate XI. At the fall of the Hawaiian Monarchy this, with Nos. 1, 3 and 4, came to the Bishop Museum where it is numbered 6829.

3. Cloak of iiwi with border, diamonds and triangles of oo. It formerly belonged to the chief Kalanikauikalaneo, from whom it came to the chief Charles Kanaina, father of King Lunalilo, and after the death of Kanaina in 1878 it was purchased by the Government for $1200. Length, 54.5 inches; front, 45 inches; width at base, 148 inches. No. 6830, B. P. B. M. Fig. 49.

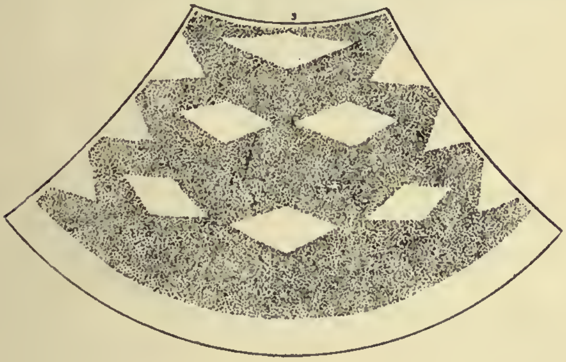


FIG. 49.

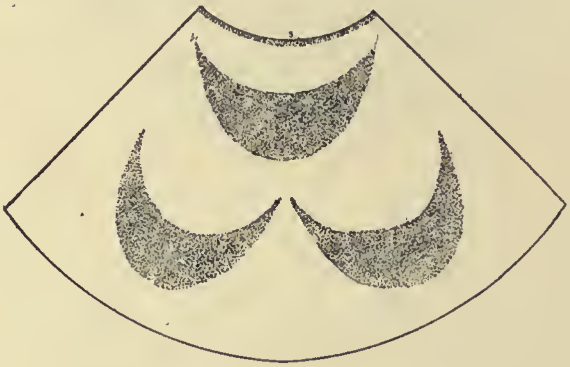


FIG. 50.

4. Pa'u of oo, with small triangles of red and black at the ends. This, the only known example of a feather robe made for a woman,[34] belonged to Nahienaena the beloved sister of Kauikeaouli [Kamehameha III.], a princess well deserving such a decoration. It is related that at a reception given to Lord Byron, H. B. M. N., in 1825, the Princess was urged to wear this pa'u and at first refused on the ground that such robes belonged to the heathen times. She was then a girl of ten years and would have been almost concealed in this immense garment, which was 20 feet 8 inches long and 30 inches wide. Since the death of the Princess, in 1836, this pa'u, cut in two and re-united lengthwise, has been used as a royal pall, last over the coffin of Kalakaua. No. 6831, B. P. B. M.

5. Cloak of oo and iiwi, from London, without history. Length, 46 inches; front, 40 inches; neck, 26 inches; base, 72 inches. No. 323, B. P. B. M. Fig. 50.

6. Cloak of oo with perhaps half of its surface covered with iiwi: not in perfect preservation. Purchased in London for £25. History unknown. Length, 48.5 inches; front, 47 inches; base, 168 inches. No. 958, B. P. B. M. Fig. 51.

7. Cape of oo and iiwi, dating from the time of Kamehameha I. Plate XV.

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[34] It perhaps marks the transition from a war-robe, suitable only for warriors, to a state decoration and mark of high rank which the feather garments assumed in later days.

Formerly owned by the Peterson family in Honolulu. Length, 15.7 inches; front, 10 inches; base, 64 inches. In splendid preservation. Fig. 52.

8. Cape of oo and iiwi; the central crescent half red and half black [oo]. Once the property of Princess Pauahi [Mrs. Bishop] and worn by her when a child. The net is neatly made of nine irregular pieces, as shown in Fig. 54. Length, 14.5 inches; front, 9.5 inches; width, 28.5 inches. No. 955 in the Bishop Museum. Fig. 53.

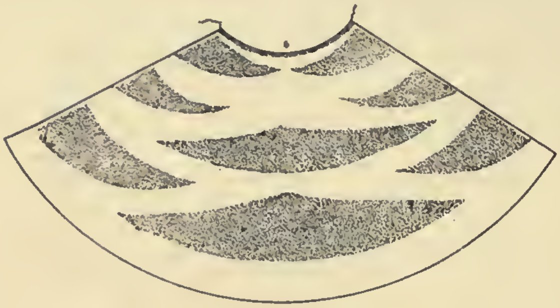


FIG. 51.

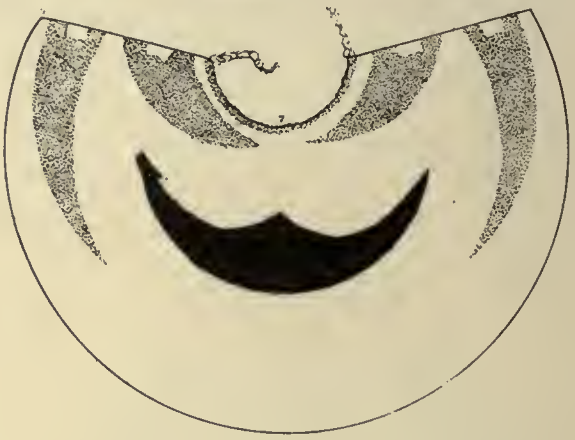


FIG. 52.

9. Cape of oo and iiwi; once the property of Queen Emma. Length, 12.5 inches; front, 8 inches; base, 66 inches. No. 956 in the Bishop Museum. Fig. 55.

10. Cape of oo and iiwi; worn by Queen Emma when a child at the Royal School. I find from the private journal of Mr. Cook, the master of that remarkable school for young chiefs, that it was customary to send for the Princes Lot and Alexander with Bernice Pauahi and Emma to attend the king, Kamehameha III., at state functions, or when officers of war vessels or other distinguished visitors were received at the palace. Length, 15 inches; front, 8 inches; base, 66 inches. Feathers somewhat worn. No. 957 in the Bishop Museum. Fig. 56.

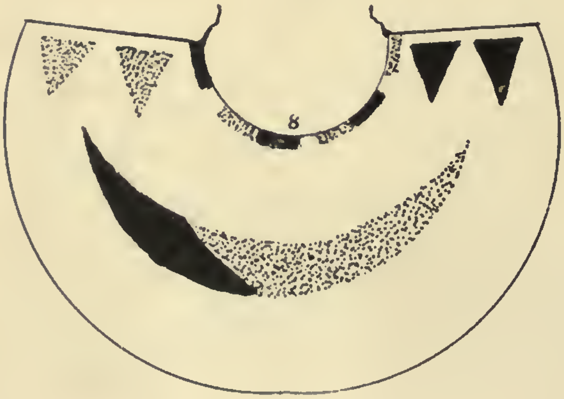


FIG. 53.

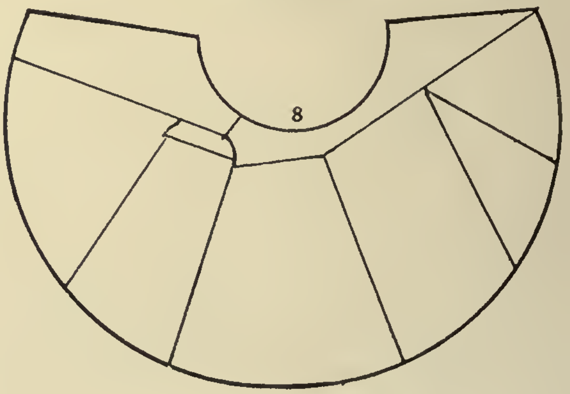


FIG. 54.

11. Cape of oo and iiwi, in fairly good condition. Carried to Boston about 1835. The owner died, and his son, in straightened circumstances, offered it to his

landlady in payment of a bill of fifty dollars. From her it was purchased by Gorham D. Gilman, Hawaiian Consul General in Boston, who presented it to the Bishop Museum [No. 6841]. Length, 11 inches; front, 6.5 inches; circumference on neck, 14 inches; on the base, 49 inches. Fig. 57. Shown also in Fig. 42.

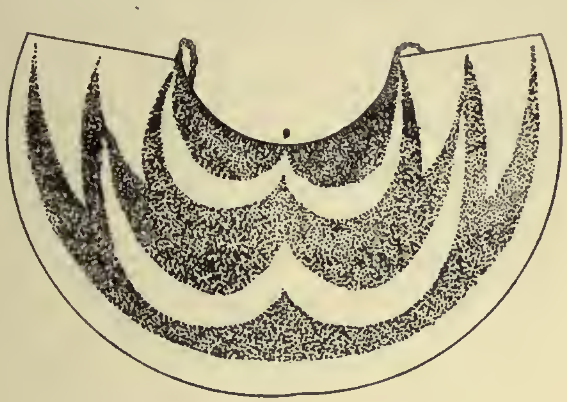


FIG. 55.

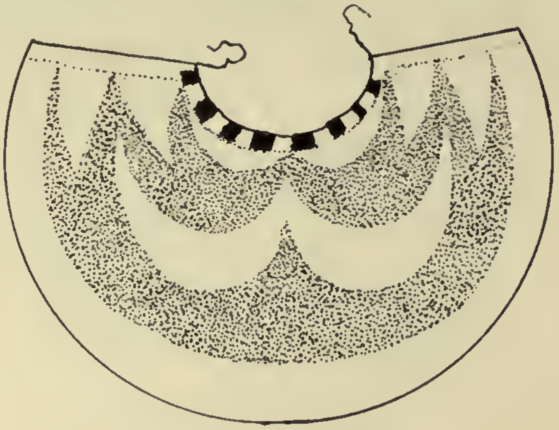


FIG. 56.

12. Cape of oo and iiwi; formerly in the cabinet of the American Board of Commissioners for Foreign Missions in Boston, whence it was purchased for the Bishop Museum [No. 7766]. Length, 28.5 inches; front, 11 inches; base, 72 inches. This, when received at this Museum, was very much discolored, and the yellow oo little more than a brown dust color; the skilful hands of a native lady restored the original color, nearly if not quite, by careful washing. Fig. 58.

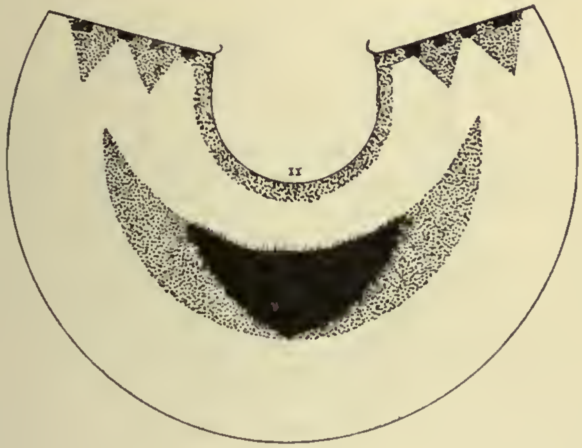


FIG. 57.

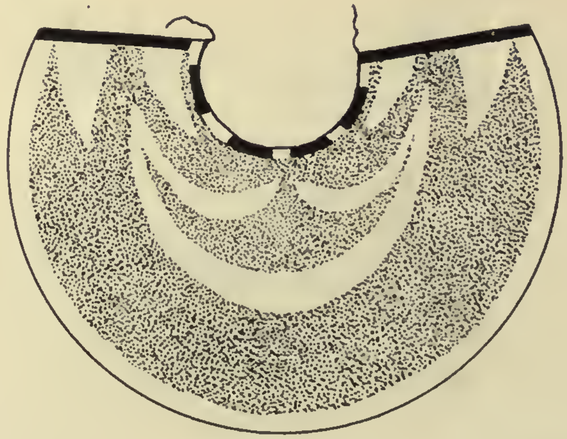


FIG. 58.

13. Cape of oo and iiwi; purchased in Boston for $100. Pattern almost identical with that of No. 10. Net in five pieces of fine texture. Length, 13 inches; front, 10 inches. No. 8075 in the Bishop Museum. Fig. 59. The modern history of the cape is contained in the following note which came with the specimen:

BOSTON, JANUARY 11, 1897.

MY DEAR MR. GILMAN:—

The latter part of the year 1833 Mr. and Mrs. Rufus Perkins left Boston on their way to China where Mr. Perkins was engaged in business........ Some matters required Mr. Perkins to remain in Honolulu some little time. King Kamehameha, surnamed "the good," gave them one of his grass cottages at the head of Nuuanu Valley for a residence. There, April, 1834, their daughter Mary, who became my mother, was born. She was of the same age as the heir to the throne,[35] and the king gave her this feather cape as a token. Very truly yours,

B. B. BARDWELL.

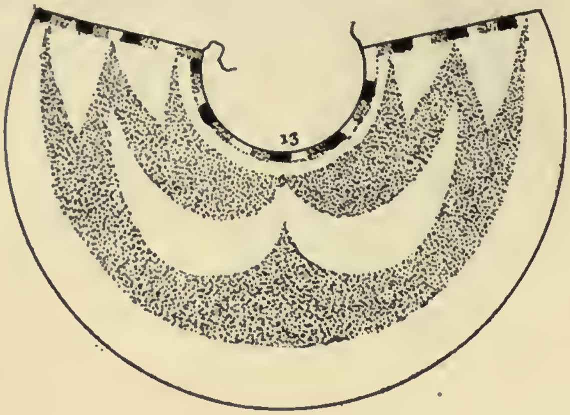


FIG. 59.

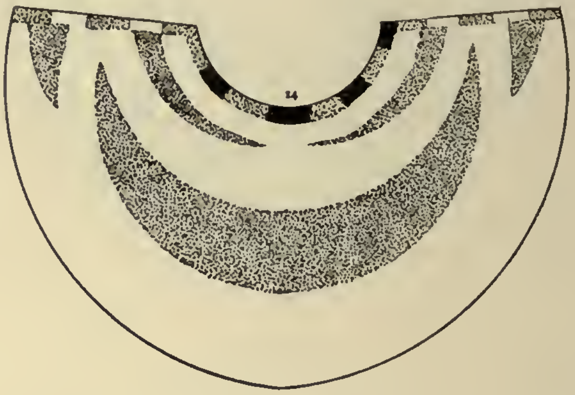


FIG. 60.

14. Cape of oo and iiwi; once the property of Kaumualii, King of Kauai, and by him given to Mr. Whitney of the newly established Mission at Waimea. After the death of Mrs. Whitney it was purchased by Hon. A. F. Judd. It is in good condition. Length, 14.5 inches; front, 9.5 and 10 inches; base, 64 inches. Fig. 60.

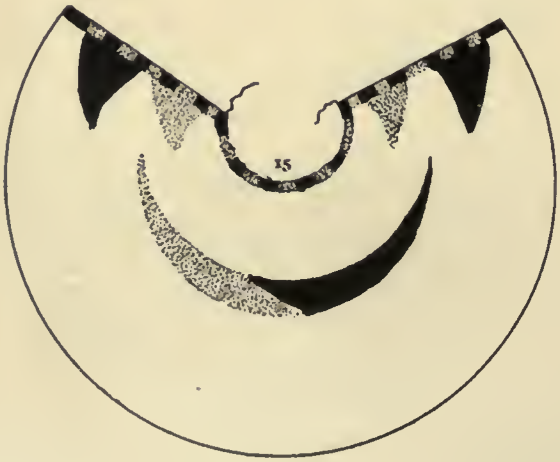


FIG. 61.

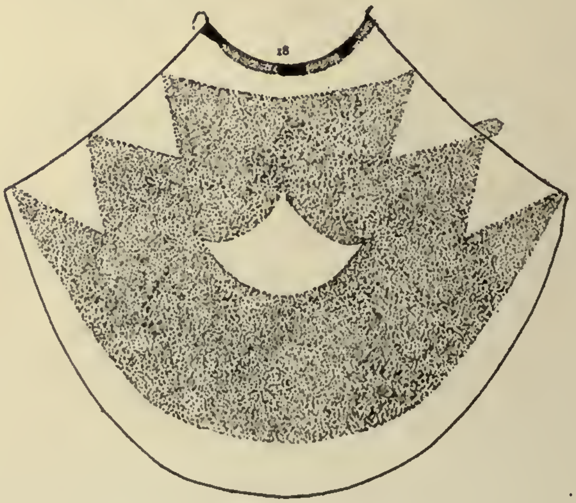


FIG. 62.

15. Cape of oo with a central crescent half red, half black; red and black triangles on front, and black and red border on neck and front. Property of Mrs. Haalelea. Length, 14.5 inches; front, 9.7 and 10 inches. In good condition and the feathers very thick. Fig. 61.

[35] Alexander Liholiho [Kamehameha IV.] was born February 9, 1834.—Chas. R. Bishop.

16. Cloak purchased in England for $600. Her Majesty the late Kapiolani was the owner of this cloak which I have not seen for several years. There was, if my memory serves, nothing remarkable about it, and it is reported buried with its former owner.

17. Cloak belonging to the ancestors of Kekauluohe, the mother of King Lunalilo, and by order of his father Kanaina buried in the coffin of the king. It was large, of oo with more or less green ou. One person remembers that there was a green crescent on the back; another that it was all green!

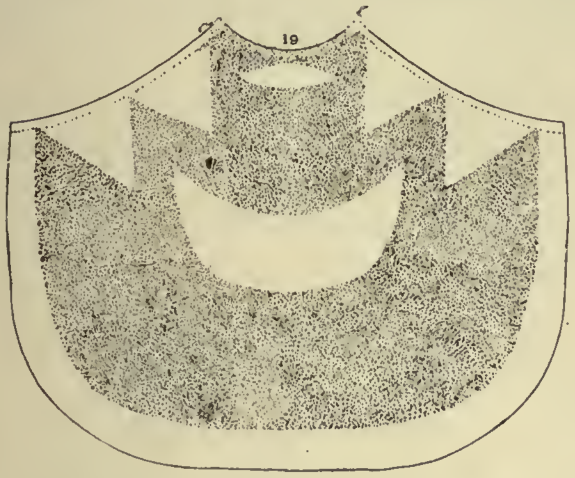


FIG. 63.

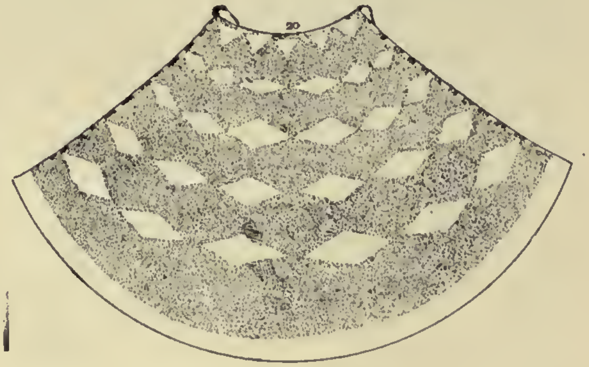


FIG. 64.

18. Cloak of iiwi with oo decorations; collar red and black; feather tab on the right side; length, about 57 inches. In the collection of Her Majesty Queen Victoria at Windsor Castle. This, with the others described below [19, 20, 21, 85, 86, 87] was found carefully packed away in the round tower at the castle while search was being made for the royal cloak sent by Kamehameha to King George. Fig. 62.

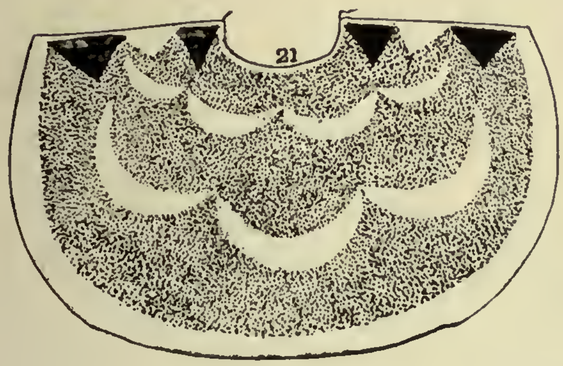


FIG. 65.

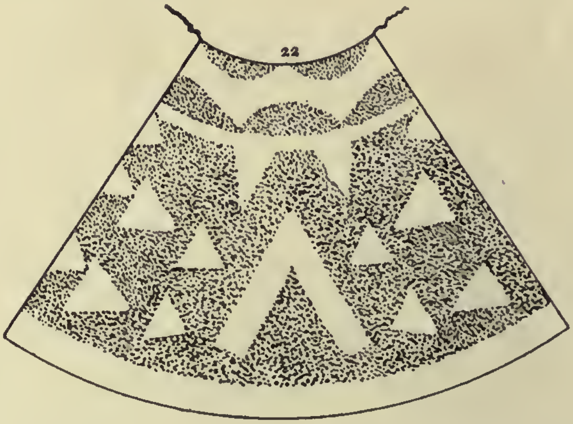


FIG. 66.

19. Cloak of iiwi with figures of oo. A narrow black and yellow band around the neck was accidentally omitted from the diagram. Fig. 63. The shape is rather unusual. Length, 57 inches. Windsor Castle collection. Upper figure in Plate XIII.

20. Cloak of iiwi; five yellow triangles at the neck, four concentric bands of six lozenges each, and a yellow band at the base; narrow red and black border at the front edges. A magnificent cloak but badly preserved; as will be seen by the Plate, XIII., the net is visible in many places. Fig. 64. Windsor Castle collection. Length, 68 inches; base, 160 inches.

21. Cape of iiwi with basal border of oo and seven crescents in two rows on the back; on each front a yellow triangle between two of black oo. This is large for a cape and small for a cloak. Fig. 65. Plate XIV., *a*. Windsor Castle collection.

22. Cloak of iiwi with bands and triangles of oo. About 60 inches long and quite narrow; apparently to cover only the back and sides of the wearer. Wäber [*anglicè* Webber], the artist of Cook's third voyage, brought this home and gave it with other things to Berne, his native town, where it is preserved in fair condition in a sealed glass case in the fine new Municipal Museum. The diagram, Fig. 66, is from a sketch by the author, as it was difficult to photograph it in its double case.

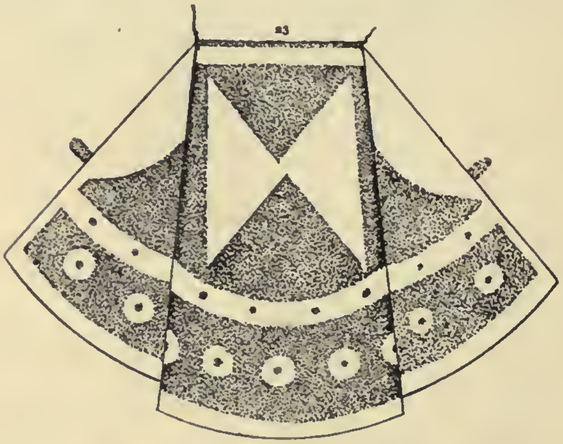


FIG. 67.

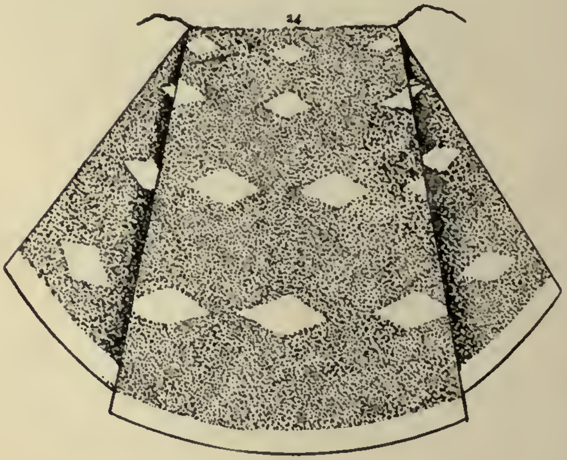


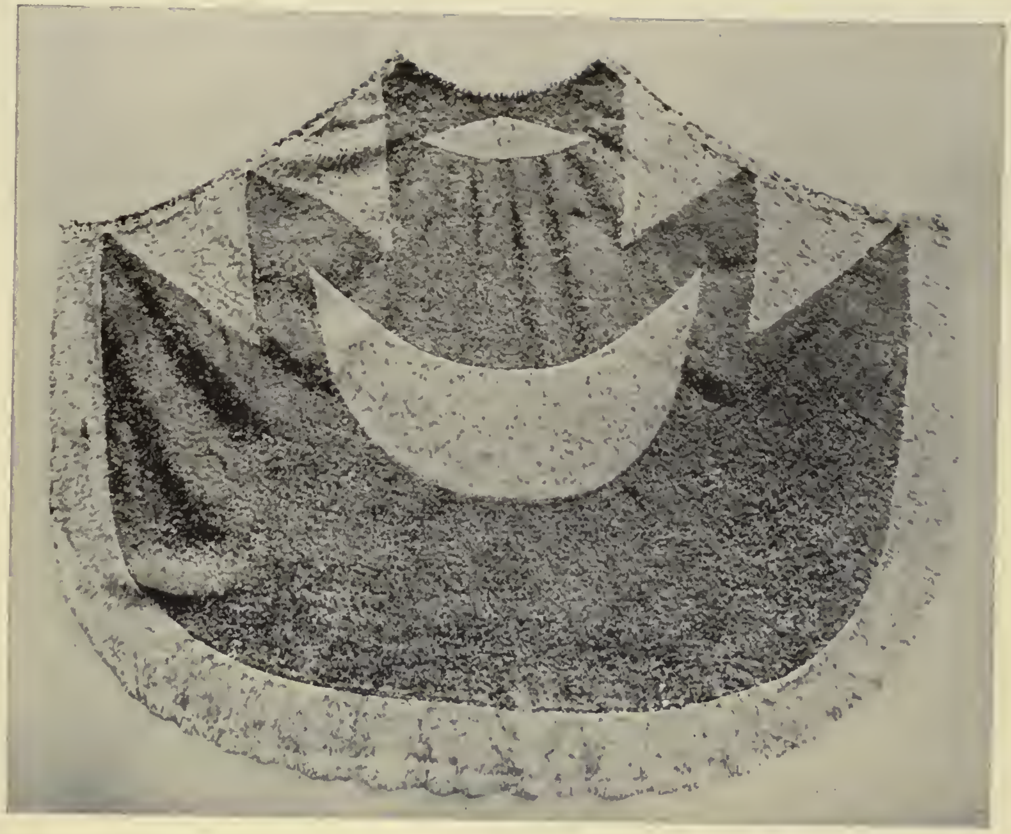
FIG. 68.

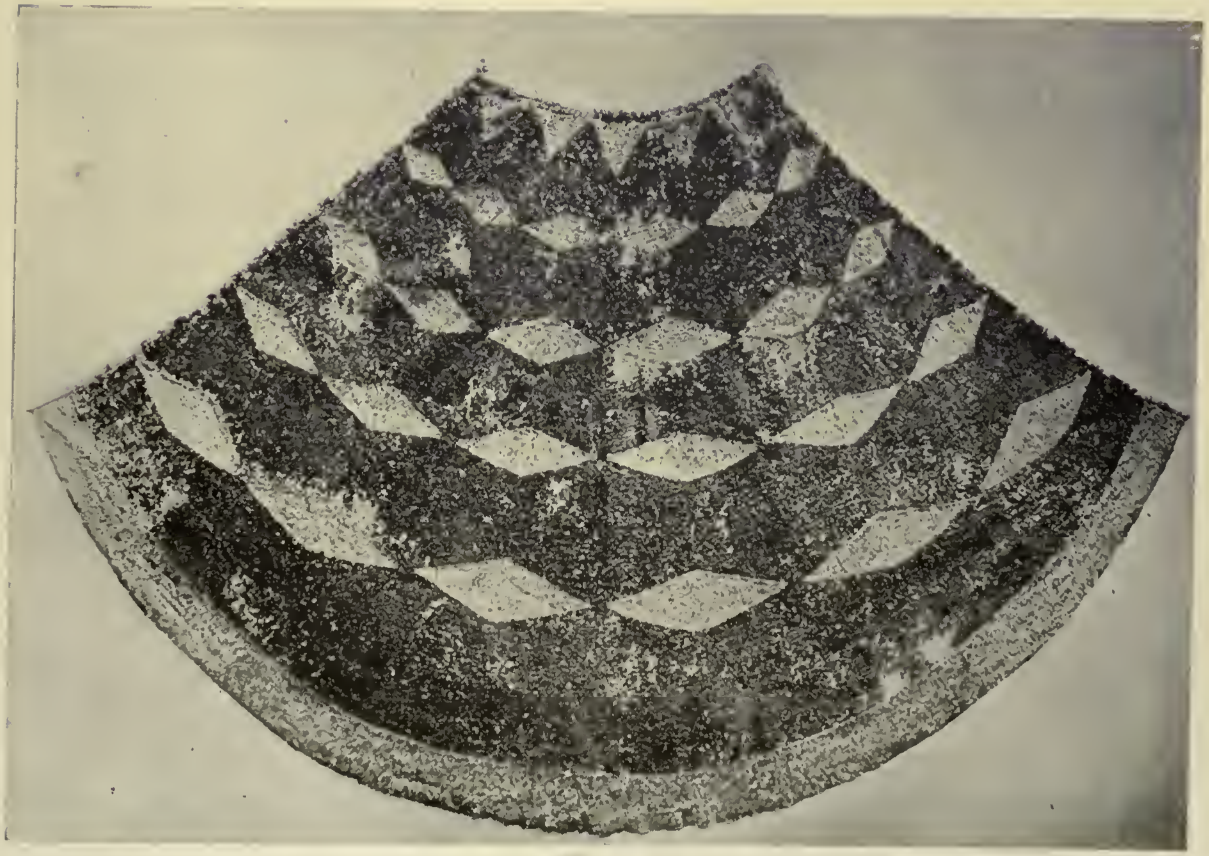
23. Cloak of iiwi with bands, triangles and circles of oo. Feather tabs on the front edges. Length, 70 inches; front, 50 inches; base, 116 inches. A remarkably showy pattern. From a water-color sketch by J. Edge-Partington, Esq. In the British Museum, without history of ancient ownership. Fig. 67.

24. Cloak of iiwi with rhombs of oo and a basal border of the same. Neck, 29 inches; length, 64 inches; front, 54 inches; width, 102 inches. British Museum. Its resemblance to the Windsor cloak, Plate XIII., will be noticed. This, with most of the others in the British national collection has been figured from Mr. Partington's water-color sketches made for the author. Fig. 68.

25. Cloak of cock's feathers with neck and front border of alternate triangles of iiwi and oo. Length, 70 inches; front, 36 inches; neck, 29 inches; width, 69 inches. One of the long, narrow cloaks, and of a construction often repeated [32, 33, 34, 64, etc.]. While the addition of the feathers of the common fowl must be regarded as a

64a





HER MAJESTY VICTORIA'S CLOAKS IN WINDSOR CASTLE.

cheap substitute for the far more precious oo and iiwi, these cloaks were not without a special grace of their own. It may be noted that the barnyard fowl was brought to these islands by the early Polynesian immigrants, and they were common enough at the time of Cook. While these birds have not run wild like the turkeys, I once found a hen sitting in the midst of a bird's nest fern [*Asplenium nidus*] growing on the horizontal branch of a tree some twenty feet from the ground, and at least four miles removed from any human habitation. British Museum. Fig. 69.

26. Cape or tippet of iiwi with oo ornaments, one small crescent and two semi-crescents extending the width of the cape and united by the apices. Length, about 16 inches; neck, 26 inches; front, 8.5 and 9.5 inches. Fig. 70. British Museum. This looks like the beginning of a larger cape, and in this and the next specimen there is no basal border.

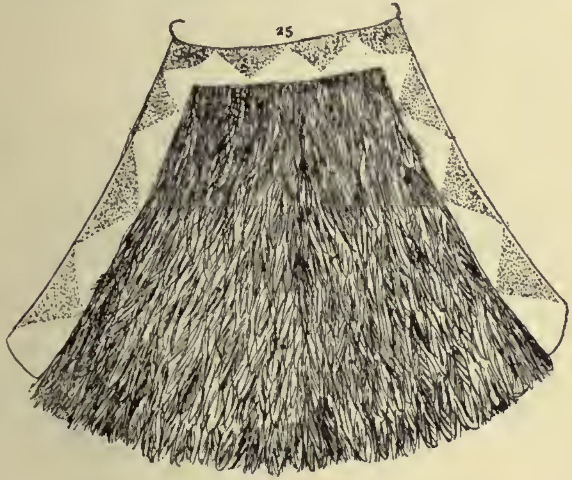


FIG. 69.

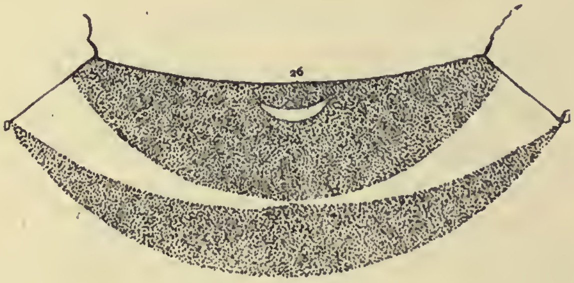


FIG. 70.

27. Cape of yellow oo with a narrow cervical and frontal border of black oo. Length, 11.5 inches; neck, 14 inches diameter; front, 7.7 and 7.2 inches. British Museum. According to Scott Wilson the yellow feathers of this cape are mamo, and he is probably right. The cape looks like the beginning of a royal robe. Fig. 71.

28. Cape of oo and iiwi, the latter dotted through the yellow as well as arranged in a central spherical triangle, and two small triangles on each front edge. Length, 12.5 inches; front, 8.5 inches. British Museum. [Christy Coll., 5769.] Fig. 72.

29. Cape of iiwi and oo feathers, the latter in two unusual loops. Neck, 31 inches; front, 8.5 and 10.5 inches. British Museum. Fig. 73.

30. Cape of iiwi with two large triangles, a central lozenge and basal border of oo. A narrow neck band of yellow, red and black. The oloná net is especially good. Length, 11.5 inches; front, 7.2 and 7.5 inches; neck, 15 inches; width, 29.5 inches. British Museum. Fig. 74.

31. Cape of iiwi with two bands of oo. Length, 15.5 inches; front, 9 inches;

neck, 12.5 inches. Vancouver collection; now with Christy Collection in the British Museum. Fig. 75.

32. Cape of cock's feathers with cervical border of red, black and yellow. Length, 22 inches; front, 9 and 10.5 inches; neck, 13 inches. British Museum. Fig. 76.

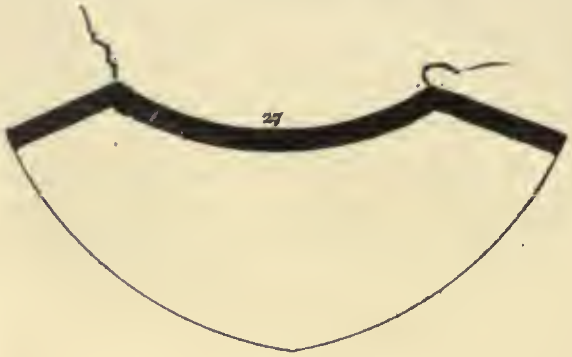


FIG. 71.

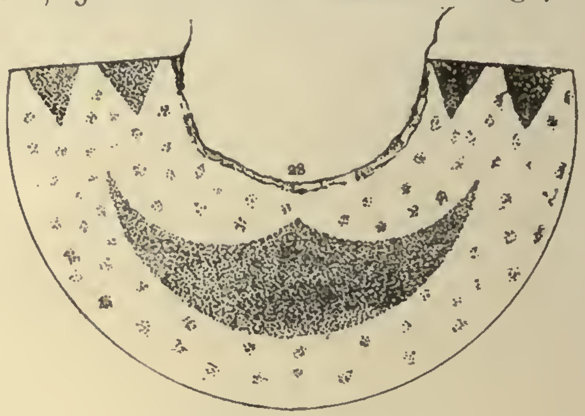


FIG. 72.

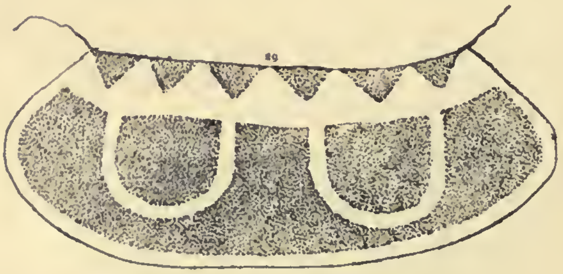


FIG. 73.

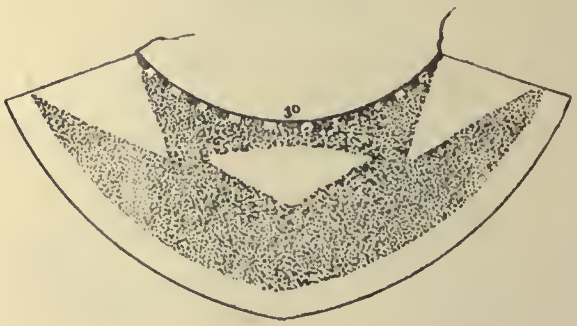


FIG. 74.

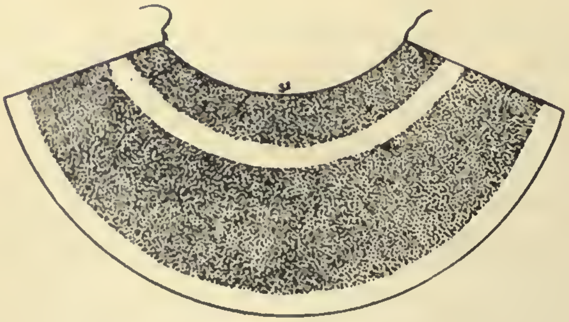


FIG. 75.

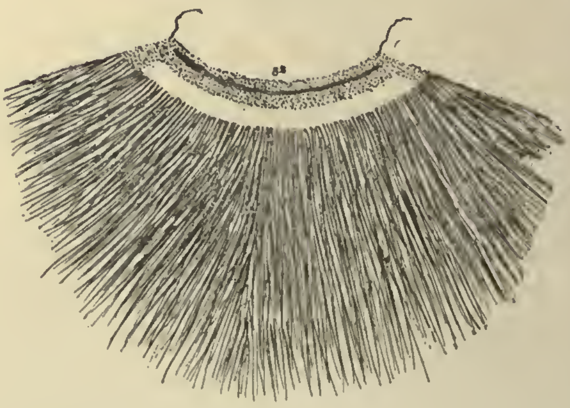


FIG. 76.

33. Cape of cock's feathers with a cervical and frontal border of red and yellow. Open oloná net. Length, 15 inches; front, 8 inches; neck, 21 inches; width, 34.5 inches. British Museum. Fig. 77.

34. Cape of black and white fowl feathers with a band of red around neck and on upper third of front; base of game cock feathers. Length, 15 inches; front, 8 inches; neck, 14 inches; width, 29 inches. Mounted on oloná net. British Museum. Fig. 78.

35. Cape [?] of unusual shape; more suitable for waistband or petticoat. The base is a net of oloná with large meshes. A band of red and yellow feathers comes first on the upper part, then white fowl feathers edged top and bottom with black cock's feathers, and at side with game cock feathers. The lower corners have loops, the upper corners the usual strings. Length, 18 inches; top, 30.7 inches; bottom, 48.5 inches. British Museum. Fig. 79.

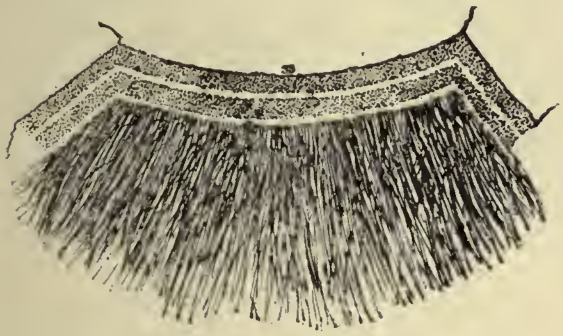


FIG. 77.

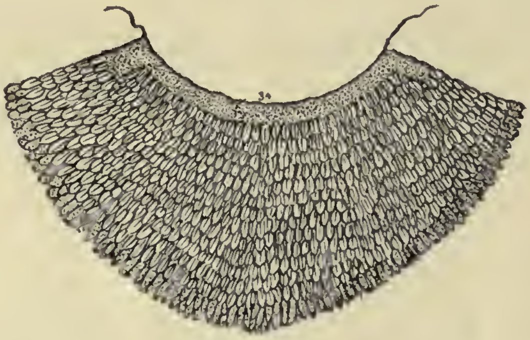


FIG. 78.

36. Curious apron-like structure of cock's feathers 40 inches long, 24 inches wide, narrowing at the top to 10 inches. Perhaps a dress for an idol. British Museum.

37. Cape of iiwi, oo and black oo. Length, 14 inches; front, 7.7 and 7.2 inches. Christy Coll., 5897. British Museum. Fig. 80. From a photograph.

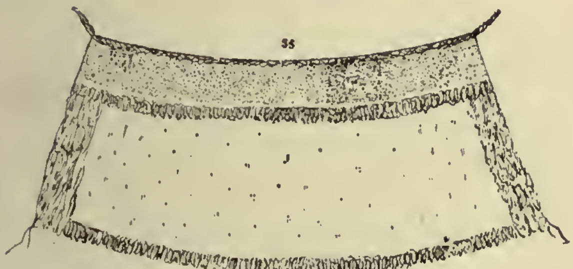


FIG. 79.

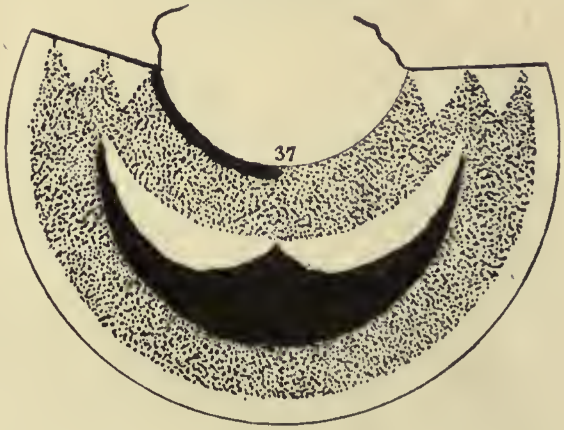


FIG. 80.

38. Mat of rods covered with feathers of various colors arranged as shown in Plate VI. There are five bands of unequal width and of design much more varied than usual in Hawaiian feather work, and the narrower edges are fringed with sparse cords about six inches long. The structure is by no means neat or strong. It has already been stated that the probable use was in conjunction with the feather war god. British Museum.

39. Mat similar to the last and shown with it on Plate VI. I know of nothing

similar in any other collection, and it is very unfortunate that the history of these strange objects is lost. British Museum.

40. Fragment of a fine cape. The net is of well twisted, closely netted oloná: neck border and cords of the usual square braid: front edges finished with a flat braid. Feathers are inserted in rows one-half to five-eighths of an inch apart with two oloná threads loosely twisted but fastened in three turns around each bunch of feathers. Black and yellow oo, the crimson of very long apapane feathers: the only ahuula I have found with these feathers. It belonged to the early missionary Rev. Hiram Bingham: perhaps given to him by his friend Kalaimoku, the Prime Minister. It was carried to the United States in 1840, and when lent to a friend was mutilated by a negro servant in the household. Length, 24 inches; front, 12 inches. Now in possession of the Bingham family in Honolulu. Fig. 81. The portion to the left of the irregular black line is now extant.

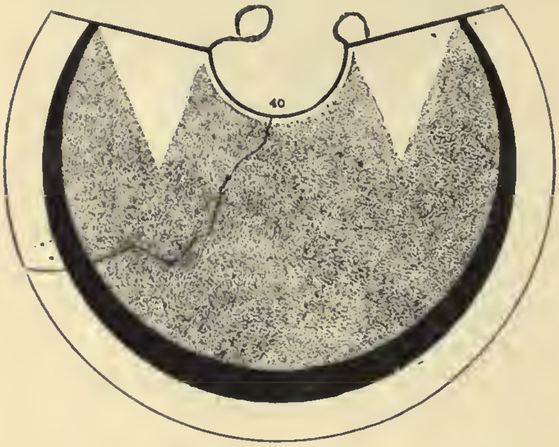


FIG. 81.

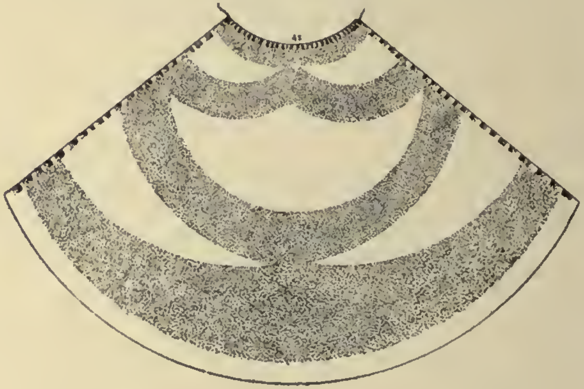


FIG. 82.

41. Cloak of oo and iiwi. Given to Commander J. H. Aulick, U. S. Navy, by Kamehameha III. in 1841. Cervical border (23 inches) of black and yellow oo; front edges red, black and yellow. Length, 48 inches; base, 138 inches. United States National Museum, Washington, 79,180. Fig. 82.

42. Cape of oo with crescents and semicrescents of iiwi, and a central crescent of black oo. Cervical and frontal border of red, black and yellow. Length, 16 inches; neck, 16 inches; base, 66 inches. Obtained by Commander William Compton Bolton in 1841. United States National Museum, 3574. Fig. 83.

43. Cape of iiwi with basal border of oo and five crescents of the same. Cervical and dorsal border of black and red. Length, 15 inches. Deposited in the United States National Museum by Mrs. J. C. Welling and Miss Dixon. Fig. 84.

44. Cape of iiwi with basal border and figure of oo of remarkable design. Property of Henry Chapman, Esq., of Philadelphia, Penn. Length, 56 inches; front, 44 inches; greatest breadth, 96 inches. These measurements are plotted from a water

color sketch kindly given me by Prof. Benjamin Sharp and may not be exact. Fig. 85 shows the pattern and also three holes, perhaps made by some weapon during battle.

45. Cape of iiwi with basal border an inch wide, crescent and two semicrescents of oo; two larger semicrescents of black oo. Cervical and frontal border of red, black and yellow. Length, 9.2 inches; front, 7.7 and 7.2 inches. Given by Miss Bissell to the Berkshire Athenæum at Pittsfield, Mass., and preserved in the library in a glass frame. The feathers are somewhat worn in several places. Fig. 86.

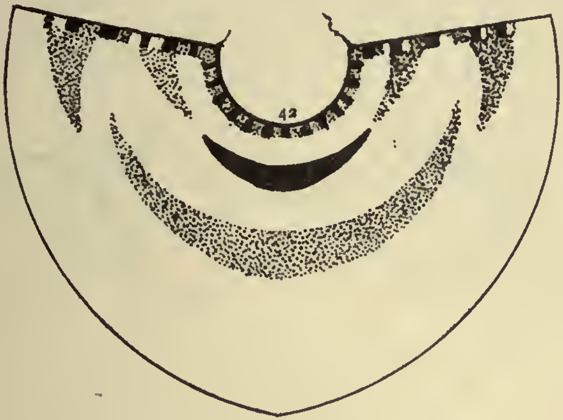


FIG. 83.

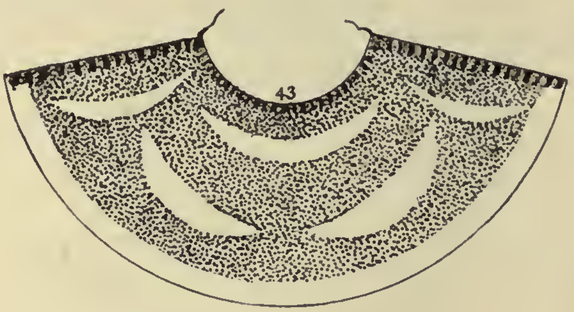


FIG. 84.

46. Cloak of iiwi, 51.5 inches long, with figures of oo. Of the long and narrow class. From a sketch by the author. In the Müseum für Völkerkunde, Berlin [1825]. Fig. 87.

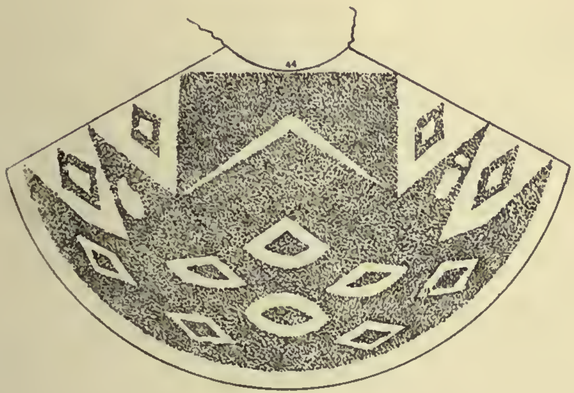


FIG. 85.

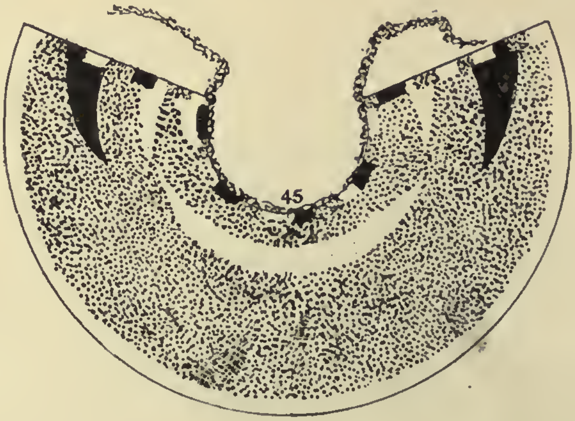


FIG. 86.

47. Cape of oo with two triangles and two semicrescents of iiwi; neck and front edges of red, black and yellow. Length, 14 inches. Museum für Völkerkunde, Berlin. Fig. 88. From sketch by author.

48. Cape of iiwi with border at base, two crescents in the middle, and a triangle on each front edge of yellow oo, the latter with a smaller insert of black oo, and two

bits of the same black on the neck. Length, 16.5 inches. Museum für Völkerkunde, Berlin. Fig. 89. Sketch by author.

49. Cloak of iiwi, 57.5 inches long, with crescents and triangles of oo and basal border of the same. Rather dirty and poor. It was so arranged in the case that I could not see the back of the cloak, hence my sketch, Fig. 90, is fragmentary. The late Dr. Bahnson offered to open the case, but was prevented during my short visit by other callers. Nationalmuseet, den Ethnografiske Samling, Copenhagen.

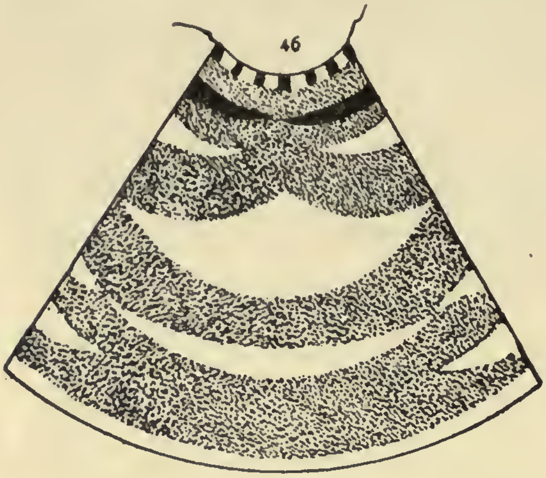


FIG. 87.

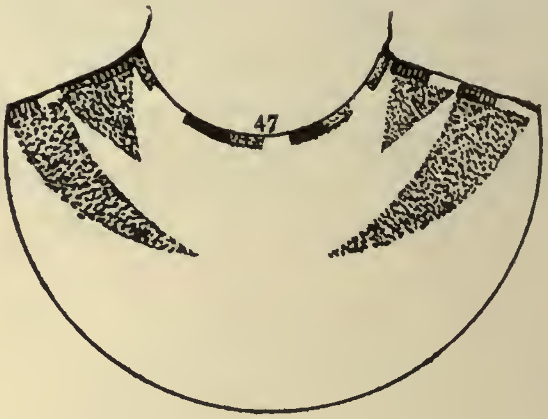


FIG. 88.

50. Cape of oo with a spherical triangle in middle and two semicrescents on each border; front edge of dark green ou feathers; spots of iiwi are on neck and edges. In fine condition and a splendid specimen. I was unable to measure this and the succeeding specimen, which is a little smaller, for the reason given above. Nationalmuseet, den Ethnografiske Samling, Copenhagen. Fig. 91. Sketch by author.

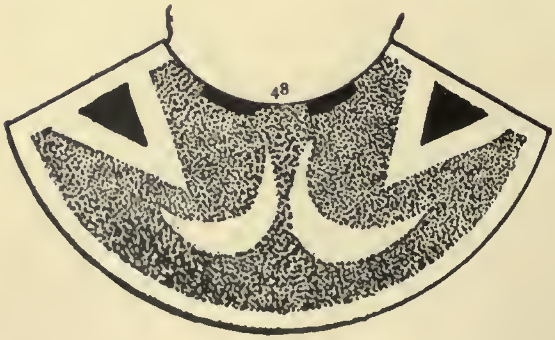


FIG. 89.

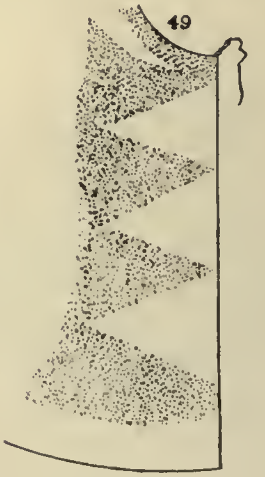


FIG. 90.

51. Cape of iiwi with three crescents in the middle, two triangles on each front edge, and five on the neck, with basal border of oo: the neck border of iiwi

and black oo. Nationalmuseet, den Ethnografiske Samling, Copenhagen. Fig. 92. Sketched by author.

52. Cloak of iiwi with triangles and border of oo as shown in Fig. 93. From a photograph sent to me by Miller Christy, Esq., of Chelmsford, England. It is the property of Mr. Lucas, of London.

53. Cloak of ou, iiwi and oo, brought to London at the beginning of the century. As will be seen in Fig. 94, which is from a photograph kindly sent me by the owner, the main portion is of green ou interspersed with yellow oo. The oloná net is firm and heavy. Length, 48 inches; front, 30 inches; neck, 36 inches; base, 126 inches. The property of Miller Christy, Esq. Deposited in the British Museum.

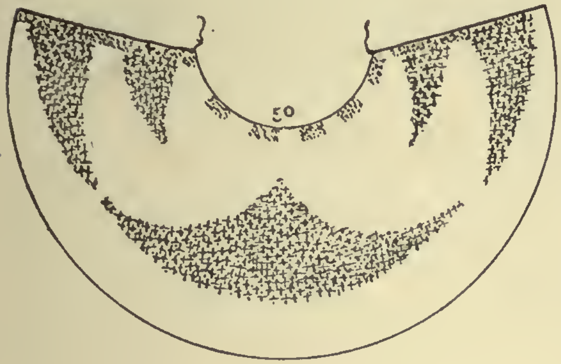


FIG. 91.

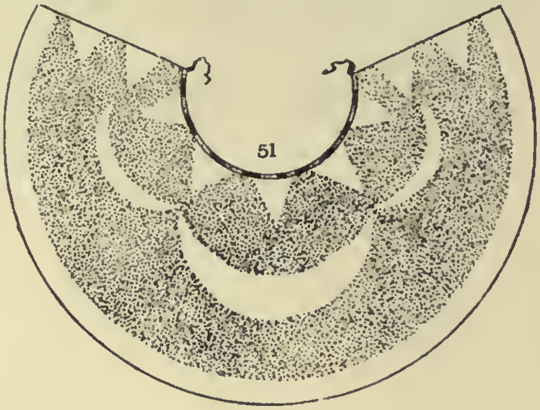


FIG. 92.

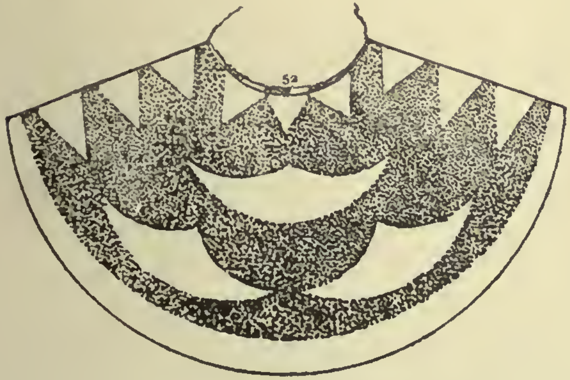


FIG. 93.

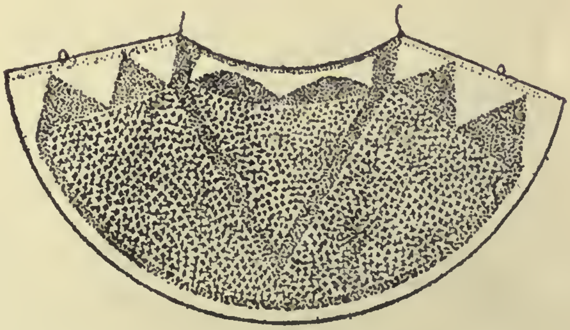


FIG. 94.

54. Cloak of iiwi and oo, in the possession of Mr. Kelly, of London. I have neither picture nor description.

55. Cape at Maidstone, England; said to be in a very damaged condition, but I have no particulars.

56. Cloak of iiwi with lozenge figures of oo. It appears to have been made in strips and the net is thin and light. This cloak is in Lord Brassey's museum

in Park Lane, London, and the account given in the catalogue of the museum is as follows:

> "The Royal Feather Cloak, one of the great attractions of the Exibition [159], is made from the feathers of the oo and mamo birds,[36] local names given to the rare birds from which these feathers are procured. It measures 5 feet in length, 2 feet 4 inches at the neck, and 12 feet at the skirt. There are only a few specimens known, which were brought over by Captain Cook from Owhyhee[37] and which are now in the British Museum. The manufacture was a work of years, and the art is now believed to be obsolete. They are woven with great skill into, as it were, a string. Each cloak has its own history, which is inscribed in the archives of the Hawaiian Islands. King Kalakaua, during his visit to this country in 1881, when at Normanhurst Court, expressed his surprise at discovering such a rarity so far away from his dominions, and promised that the history of this cloak should be copied from the ancient "Meles" or records, and sent to Lady Brassey. King Kalakaua was at that time endeavoring to form a collection of feathers to make a new royal robe for the Queen Kapiolani, for which purpose he had offered a dollar for every single feather. Some idea of the extraordinary intrinsic value of this cloak may be formed from the above statement. It was connected with the first pretended cession of Tahiti, Tamu and the Society Islands to the French in 1843. In that year Sir Thomas Trigge Thompson [then Captain Thompson] was in command of H. M. S. Talbot in the South Seas. The French, partly by promises, partly by threats, had extorted from Queen Pomare a cession of her kingdom to their nation, but she, who had never willingly consented, appealed to the British commander for protection. Her pathetic letters to the Queen of England are recorded. Captain Thompson would not recognize the newly-constituted authority, and persisted in saluting the old national flag, and refusing any honor to that hoisted by the French officials. It is unnecessary to record the history of the events connected with this incident, but it may be confidently surmised that Queen Pomare was not wanting in gratitude toward the British commander who stood by her and upheld her rights. The above royal precious feather cloak was received as a present by Captain Thompson in recognition of his services."

Kamehameha III. received a present of a carriage from Pomare, and it may be that the cloak was sent in return. In ancient days intercourse was more common between the Hawaiian and Society Groups than at present, and at one time in modern history a project was formed for uniting the two royal families by marriage.

57. Cloak of iiwi with basal border, two spherical triangles and four semi-crescents of oo; narrow frontal border of oo, and cervical border of yellow, red and black. Length, 48.5 inches; front, 43 inches; base, 144 inches. Given to the late Commodore Lawrence Kearny, U. S. N., by Kamehameha III. on the occasion of the Commodore's visit to Honolulu in 1843 on a diplomatic errand from the United States Government. It is now in possession of the Commodore's son. The yellow feathers are somewhat damaged, but the red are nearly intact. Fig. 95. From a photograph.

58. Cloak of iiwi with a basal border, three cervical semicircles, three frontal triangles on each side, and twenty-two circles of oo, some of the latter interspersed with a few mamo. Brought to Boston by the ship Columbia, Captain John Hendrick, which sailed from that port September 30, 1787, visited the Hawaiian Islands between the visits of Cook and Vancouver, and returned to Boston August 10, 1790, having carried the United States flag for the first time round the world. The subsequent history of this cloak is unknown until it came into the possession of the Joy family of Boston.

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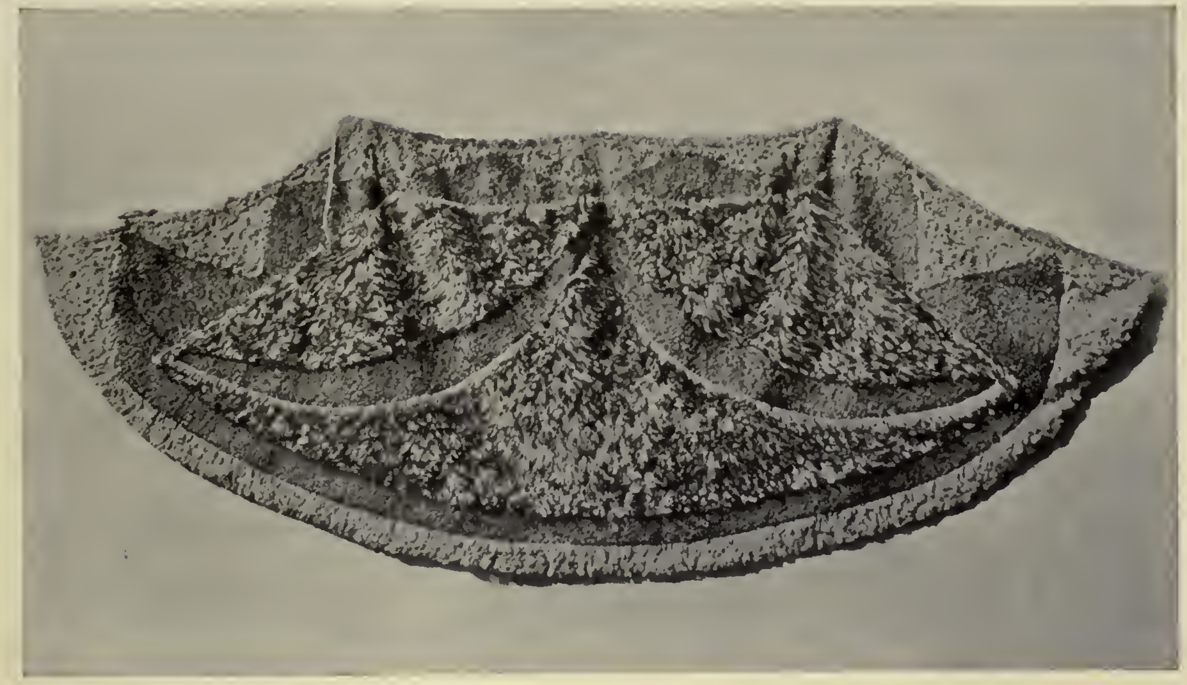
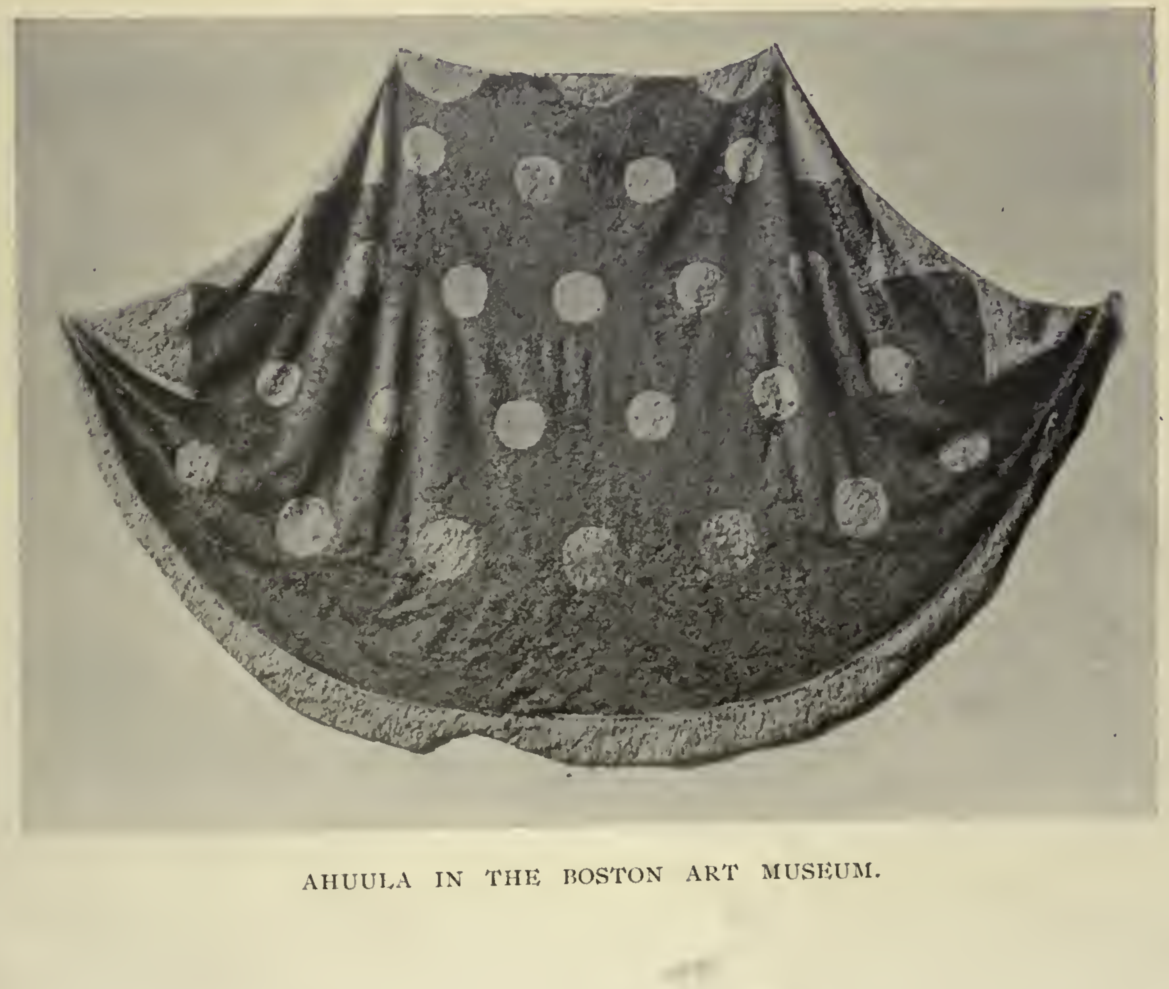
[36] The name mamo is a mistake for iiwi.

[37] Unfortunately Captain Cook never returned from Hawaii (Owhyhee).

72a





AHUULA IN THE BOSTON ART MUSEUM.

It is lined with a woolen fabric which renders it difficult to examine the net. Length, 66 inches; neck line, 34 inches; basal line, 156 inches. Deposited in the Museum of Fine Arts, Boston, Mass. Pl. XII., lower figure. The photograph was kindly sent by the Director, Charles G. Loring, Esq.

59. Cape of iiwi and oo, the main portion occupied by spherical triangles of longer feathers. Lined with a woolen fabric in recent times. It has been used as a sleigh robe. It belongs to the Joy family and is deposited in the Museum of Fine Arts, Boston. Upper figure in Pl. XII. and Fig. 96. Length, 34.2 inches; width, 89.5 inches. Photographed by the kindness of the Director, Charles G. Loring, Esq.

60. Cloak of iiwi and oo, in too dilapidated a state to clearly demark the pattern; about 60 inches long. It is on a figure intended to represent a Hawaiian warrior in the Musée d'Artillerie Galerie d'Ethnographie at the Hôtel des Invalides at Paris.

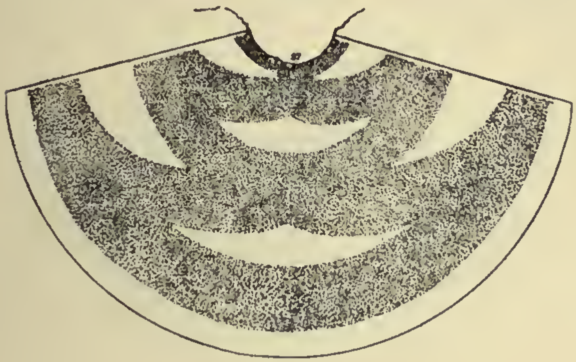


FIG. 95.

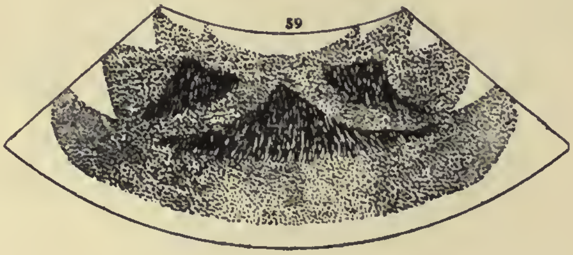


FIG. 96.

61. Cloak of oo figured with three crescents of differing shapes, and four rhombs, all of iiwi. It is in the Museum at Saffron Walden, Essex, England, and the modern history is interesting. I give it as kindly furnished by the Curator, Mr. G. N. Maynard. It came to the museum in 1838 with this letter:

> "SIR: — Understanding that the Directors of the Saffron Walden Museum are collecting and receiving curiosities of every description, I beg you will present to them in my name the accompanying article which I think may be deemed worthy a place in their collection, and which apparently tho' a trifle may be of enhanced value when considered as to the circumstances under which it reached this country. The article in question is a Feather Cloak of ceremony and did belong to Rhio Rhio [Liholiho], King of the Sandwich Islands, and was presented by him to my brother-in-law the Honourable Frederick Byng, who had been appointed by Mr. Canning as chief attendant to their Sandwich Majesties King Rhio Rhio and Queen Kamehamano [Kamamalu] when they visited this country in 1824. I have the honour to be, Sir, your obedient and humble servant,
>
> "Widdington Rectory, 7th August, 1838. COLLIN CAMPBELL.
>
> "To JOSHUA CLARKE, ESQ., Curator of the Museum Saffron Walden."

Mr. Maynard adds: "In September of the year 1865 Queen Emma, widow of King Kamehameha IV., was on a visit to this country, at which time she was a guest of Lord Charles Hervey, near here. She then paid this town a visit, being received by the Corporation in state. Among the various objects of interest in the town visited by her was the Museum, when this cloak particularly attracted her attention, and she expressed her surprise at finding such a treasure here, and at the same time begged of the trustees of the Museum the loan of the garment for the purpose of exhibiting at Paris at an exhibition which was then being held there. Upon the return of the cloak the Queen made several presents to this Museum which are now to be seen there." Length, 50.5 inches; front, 45 inches; across neck, 27 inches; base, 132 inches. Fig. 97.

62. Cloak of iiwi with yellow oo rhombs like No. 24. Length, 48 inches; base, 138 inches. This is in the Museum at Ipswich, and although I have been promised a photograph by the Curator this has not yet arrived.

63. Cloak of oo with eight triangles of iiwi almost equalling the surface of the oo. The neck is occupied by three equilateral triangles, the apices downward, and each side by two similar triangles in reverse position: a larger red triangle occupies the centre, and beneath its point a red crescent stretches from side to side. This, with the following one, was once in the collection of J. Th. Royer, Chef of the Department of Art and Science in the Hague, and until 1795 an officer of the Dutch Judicial Court. He died in 1808 and his collection was left to the Dutch Government, in whose "Kabinet van Zeldzaamheden" it bore the number 492. The two specimens were long forgotten and suffered greatly by the neglect. Herr J. D. E. Schmeltz, Director of the Leiden Ethnological Museum, has described these ahuula,[38] which are in his charge, but the colored figure which he gives is completely restored and shows nothing of the ravages of time. He does not give the dimensions, but as I remember it, it is of medium size, not exceeding 44 inches in length. Fig. 98.

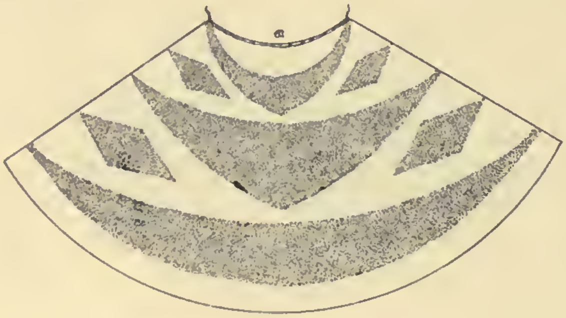


FIG. 97.

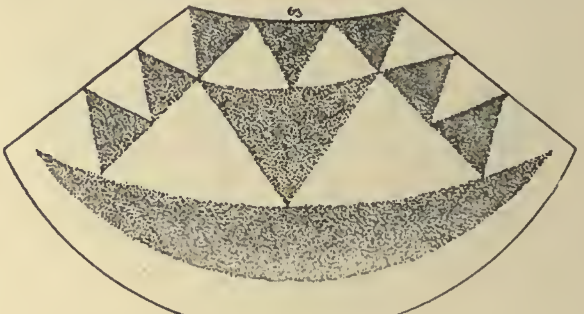


FIG. 98.

64. Cape of the long green feathers of the Frigate bird, with a narrow cervical and frontal border of alternating triangles of oo and iiwi much eaten. From the Royer Coll., No. 493, its history is identical with that of the preceding specimen. Herr Schmeltz has also described this.[39] Length, 24 inches; breadth, 54 inches. The *iwa* feathers are often supposed to be the tail feathers of the cock. Fig. 99.

65. Cloak of iiwi with basal border, eight crescents and six triangles of oo. It was brought to the United States by Captain William Cunningham, of Cambridge,

[38] *Häuptlingsmantel von den Sandwich Inseln. Internationales Archiv für Ethnologie*, Bd. I., 143. Taf. VIII.

[39] *Loc. cit.*, p. 145.

Mass. He died in the early part of this century from exposure following shipwreck, leaving no record of where he obtained the cloak. It now belongs to Mrs. L. P. M. Curran, of Englewood, New Jersey. Length, 43 inches; front, 34 inches; neck, 22 inches; base, 114 inches; breadth, 82 inches; lower border, 4 inches. In good condition, but with a hole perhaps made by a spear. Fig. 100.

66. Cape of unusual form; at present consisting of a nae of oloná with braided cord on top and sides: to this are still attached some white feathers of the koae ula [*Phaëthon rubricauda*]. Length, 22.8 inches; neck, 30.7 inches; breadth, 55.2 inches. Supposed to have come from Cook's third voyage, and for many years exposed to the ravages of light, dust and insects on a wall in the Florentine Anatomical Museum. Dr. Giglioli has described the remains.[40] The capes made from these most brilliant white feathers must have been very splendid, but this is the only one whose remains I have tracked. The plumage is far more satiny than that of *P. æthereus*.

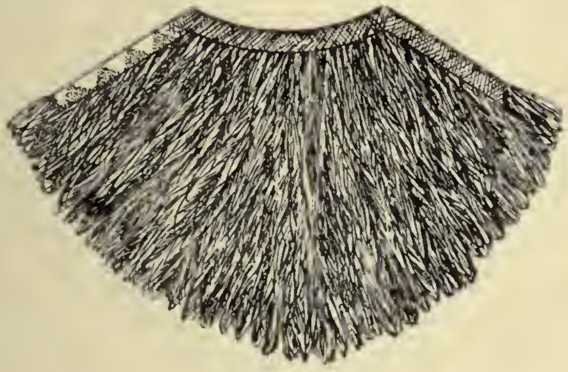


FIG. 99.

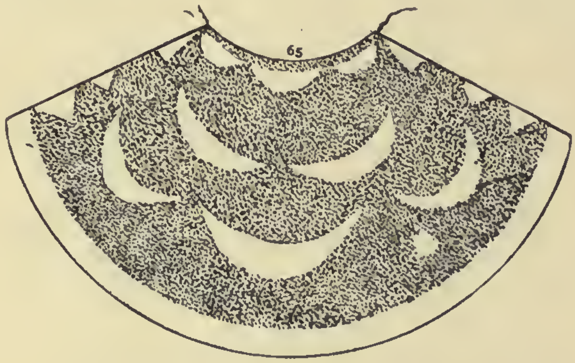


FIG. 100.

67. Cape, or rather the net of what was once a cape, on which traces of red and yellow feathers may be seen by help of a lens. Of course no pattern can be made out. The upper margin is 33 inches; the base, 54.2 inches; length, 15.7 inches. Supposed to have been brought to Europe on Cook's third voyage, and, like the preceding, was many years attached to the walls of the old museum in Florence, where it lost all its feathers.[41] Both of these capes are now fully appreciated and well cared for in the Florence Ethnological Museum.

68. Cape of iiwi with a narrow band of oo: apparently a fragment. In the Ethnological Museum at Munich.

69. Cape of oo and iiwi: extreme width, 35 inches. As will be seen in the figure, the pattern is peculiar. This and the two following numbers were among the things brought from the Pacific by Cook's companions, and they were bought in London in 1806, by the order of the Emperor Francis II., from the Parkinson and Leverian collections. Sydney Parkinson was artist to Sir Joseph Banks during Cook's first voyage, and his interest in the portions of Oceania then visited led him to collect

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[40] *Appunti intorno ad una collezione di Cook. Archivo por l' Anthropologia e l' Etnologia.*

[41] See Giglioli, *Loc. cit.*

from the treasures brought home in succeeding voyages. Although by the kindness of my friend Dr. Franz Heger I was enabled to examine the original inventories of this purchase no information of any special interest was obtained; in those days these articles were simple *curiosities* for the imperial cabinet. Now in the kaiserlich-königlich naturhistorische Hofmuseum in Vienna. Fig. 101.

70. Cape: body of white (*Phaëthon rubricauda?*) with a narrow border of black cock's feathers. Extreme width is 40 inches. At the top is a section of open oloná net. In the same museum and with the same history as the last.

71. Cape of mixed feathers, mostly the domestic fowl, with a few oo. This, like the two preceding, is in the Hofmuseum at Vienna.

72. Cape of iiwi with figures of oo. It has loops at the lower corners as well as the usual strings at the neck. By the kindness of Mr. Marshal B. Evans and Prof. M. L. Perrin I obtained a photograph of this cape which is No. 904 in the museum of the Georgia Augusta University at Göttingen. The label reads, "Ein Federmantel eines Oberhauptes aus Owaihi aus einem Netz bestehend, worauf Federn befestigt sind. Die rothen sind von der Certhia coccinia, die gelben von der Stacula longirostra." Brought to Göttingen at the end of the last century. Fig. 102.

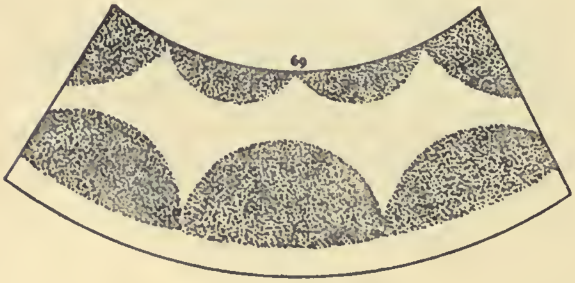

FIG. 101.

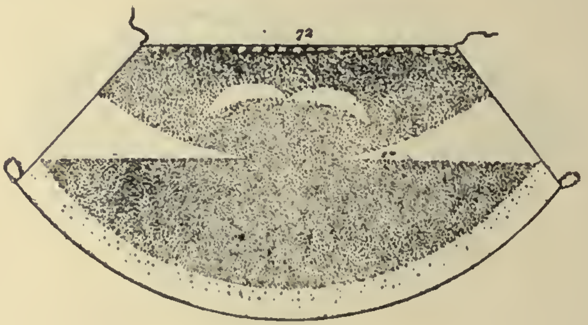

FIG. 102.

73. Cape composed mainly of long feathers, with a frontal and cervical border of alternating triangles of oo and iiwi: a figure has already been given on page 4. This with other relics of Captain Cook was exhibited at the Colonial Exhibition at London a few years ago, by the representative of Cook's family, and purchased by the Premier of New South Wales for the Australian Museum in Sydney.

74. Cloak now in New York: brought from India early in this century; previous history lost. Said to be of fine workmanship, but faded and in rags.

75. Cape of oo with a crescent of iiwi in the center and a neck border of red, black and yellow. Many years ago Kamehameha III. gave this fine cape to William L. Lee, the first Chief Justice of these Islands. October 12th, 1846, Mr. Lee arrived on his way to Oregon, and fortunately was persuaded to remain and assume the duties of a judge in a country where there were no courts worthy the name. I quote from

Professor Wm. D. Alexander's very admirable History:[42] "To say that he was the right man in the right place gives but a faint idea of his eminent services to the country. He organized the courts of justice, and so conducted the highest tribunal that it soon acquired universal confidence and respect, and, instead of being a source of weakness, became the strongest pillar of the government. As president of the Board of Land Commissioners he performed a most arduous and responsible task. Although he was not the originator of that great reform, his was the guiding mind in carrying it on." Judge Lee died May 28th, 1857. In the days when there were no Hawaiian decorations this cape of royal color and material may well have marked a monarch's appreciation of his services to his adopted country. The cape is now in possession of Mr. B. F. Wakeman, of New York, who kindly sent a photograph and measurements. Fig. 103.

76. Cloak of the long, narrow pattern, which my friend J. Edge-Partington, Esq., found in private hands in New Zealand, and to him I am indebted for the sketch which is the base of Fig. 104. The material is iiwi with a large proportion of oo. Unfortunately I have not the measurements.

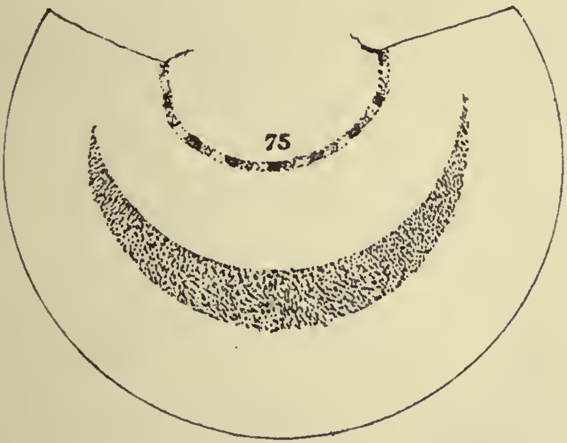

FIG. 103.

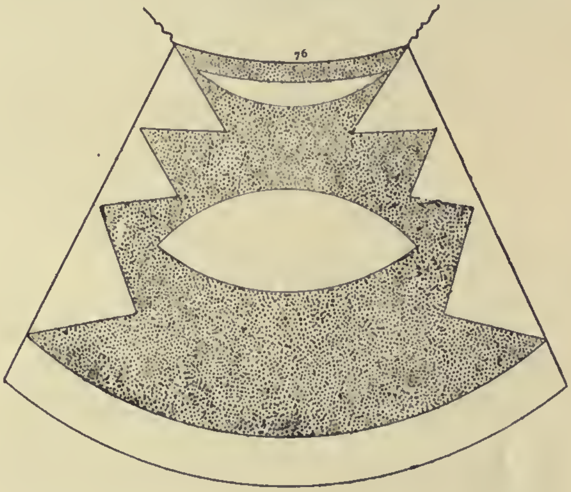

FIG. 104.

77. Cloak of which I have been unable to obtain any particulars, except that it is still believed to be in the possession of the Robeson family in the United States.

78. Cape of oo and iiwi given to Rev. Samuel Whitney, of Waimea, Kauai, by Kaumualii or his wife Kapule. At the Whitney sale it was purchased by Mr. Henry Reimenschneider. It afterward came into the hands of Kalakaua, but its present possessor is unknown.

79. Cloak of oo in the government museum at Lisbon, but no particulars are at hand.

80. Cape of oo with black oo crescent, four semicrescents and two cordate figures of iiwi. Length, 16 inches; front, 10 inches. Frontal and cervical edging of red, black and yellow. This cape belonged to Honorable Levi Haalelea and was worn

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[42] *A Brief History of the Hawaiian People*, p. 258.

by him when on a mission to Europe. It is in fine preservation and is remarkable as the only piece of feather work from Hawaiian hands that bears any design similar to the hearts shown in the figure. This, with the two succeeding numbers, is in the possession of Mrs. A. A. Haalelea, of Honolulu, who kindly placed them at my disposal for examination and photographing. Fig. 105.

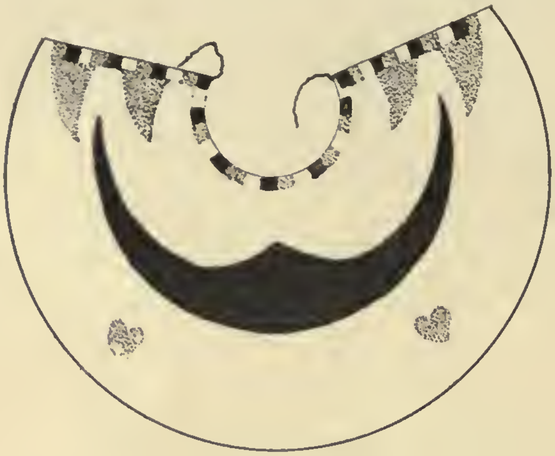


FIG. 105.

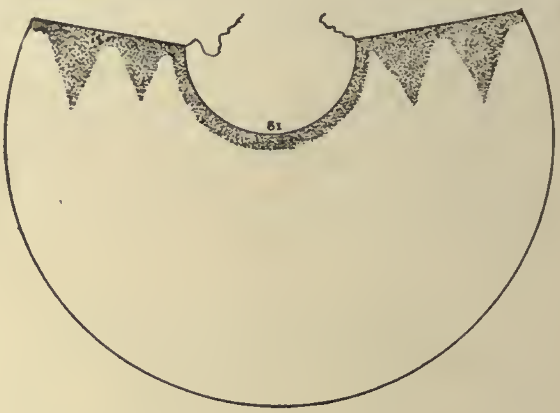


FIG. 106.

81. Cape of mamo with narrow cervical and frontal border and two frontal triangles of iiwi. Net entire. Length, 15.5 inches; front, 9.2 inches. Mrs. A. A. Haalelea. Fig. 106.

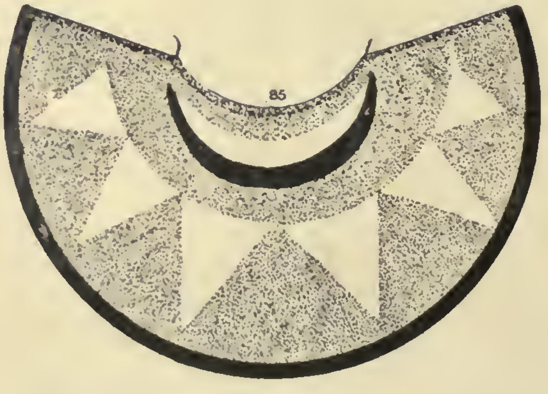


FIG. 107.

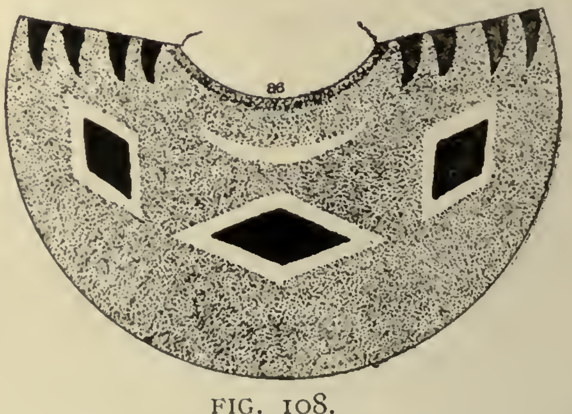


FIG. 108.

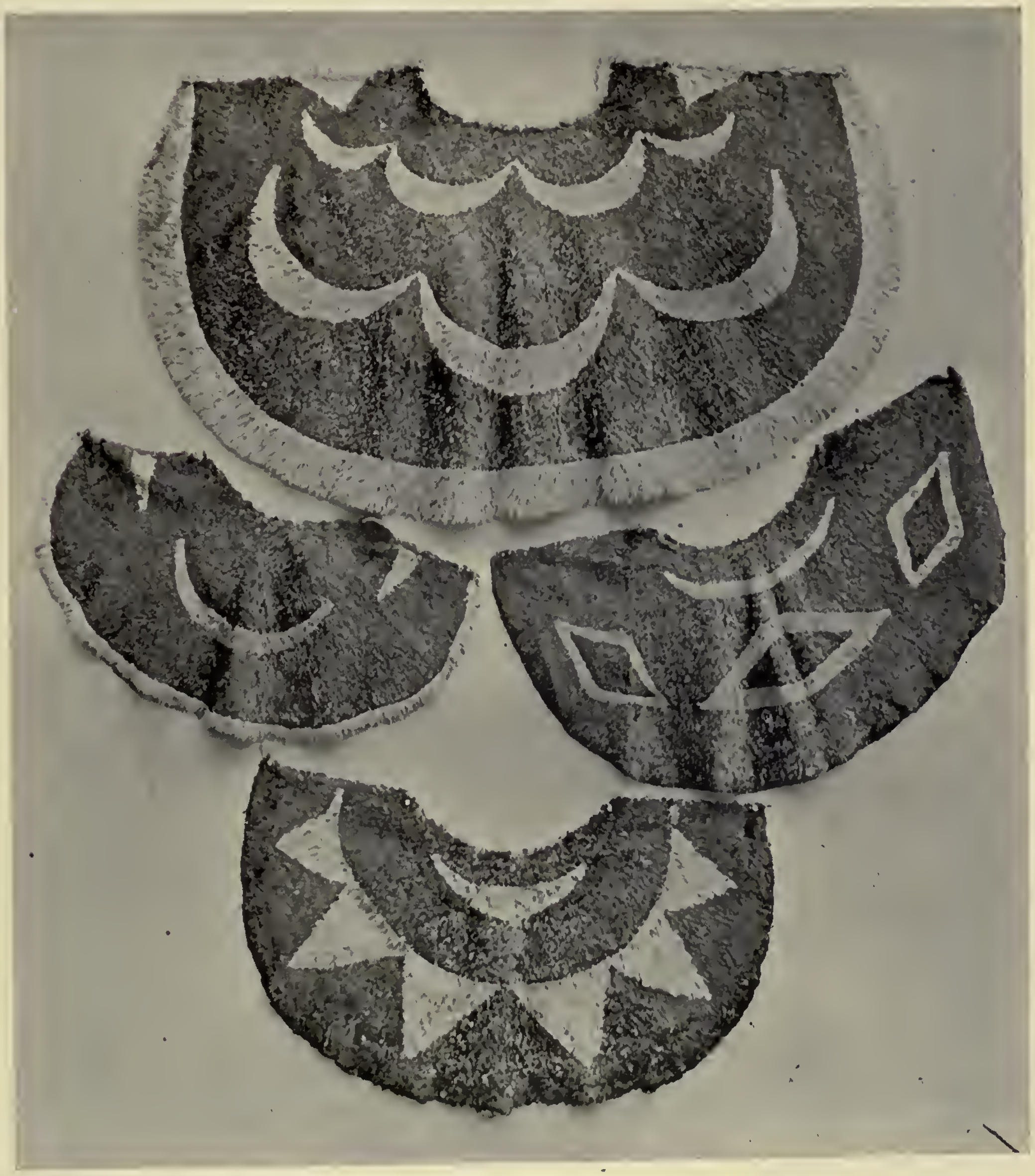
82. Cape, of which only the net remains, with traces of red and yellow feathers. Length, 11.5 inches; front, 8 inches. Mrs. A. A. Haalelea.

83. Cloak of iiwi with oo figures. Said to have been given to Mr. Geo. Hill by King Liholiho in 1824. It sold for seventy guineas in 1898, but I have not any description or figure of it.

84. Cape, said to be in London, but the owner is still incognito.

85. Cape of iiwi with six triangles of oo, points outward; above these a crescent of oo, the lower half black, the upper yellow, and a basal border of black oo. A remark-

78c-



CAPES IN WINDSOR CASTLE.

a

b *c*

d

ably attractive pattern; now in Her Majesty's collection at Windsor Castle. Plate XIV., *d*. Also Fig. 107.

86. Cape of iiwi with three rhombs of yellow and black oo, a small crescent of oo and eight small semicrescents of black oo. In Her Majesty's collection at Windsor Castle. Plate XIV., *c*. Also Fig. 108.

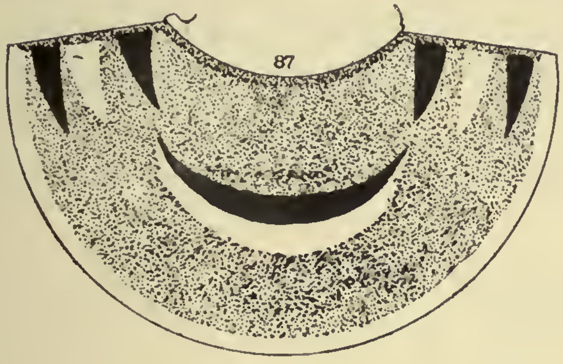


FIG. 109.

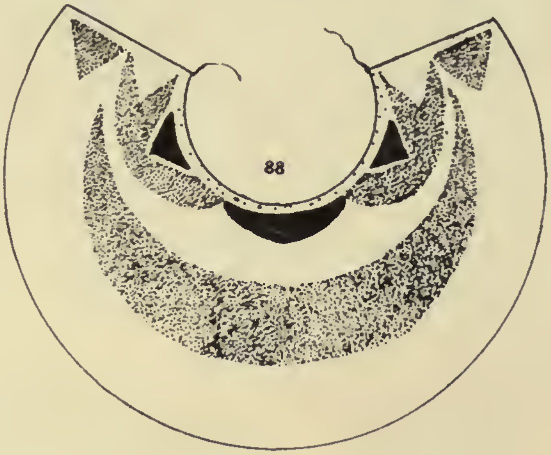


FIG. 110.

87. Cape of iiwi with yellow basal border, two yellow and four black semicrescents on front and a central crescent with the lower half yellow and the upper black. In Her Majesty's collection at Windsor Castle. Plate XIV., *b*. Also Fig. 109. The last three capes seem to belong together in style and in the union of black and yellow oo. It will be noticed how difficult it is to distinguish on the photograph black from red.

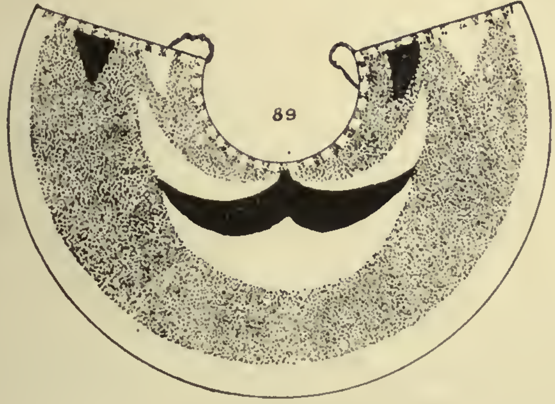


FIG. 111.

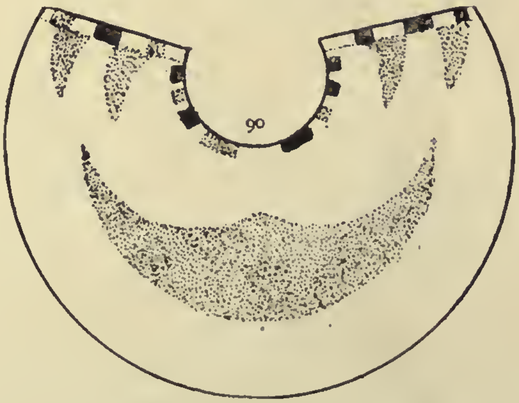


FIG. 112.

88. Cape of oo, figures of iiwi and black oo. This formerly belonged to John Kapena, Minister of Finance under Kalakaua, and now belongs to his daughter Leihula. The net is in three pieces and of good quality. Length, 11.5 inches; front, 7.2 inches; width, 27 inches. Fig. 110.

89. Cape of iiwi, with crescents and triangles of yellow and black oo: cervical and frontal border of red and yellow. Length, 11.5 inches; front, 9 inches; width, 27

inches; width of black double crescent, 12.5 inches. The net is of fine texture in ten pieces. This came from Hawaii through the grandmother of Mrs. Manuel Reis, who is the present owner. The cape is in good order, the feathers very short. Fig. 111.

90. Cape of oo, with large central crescent of iiwi and four small frontal semicrescents of the same. Cervical and frontal border of red, yellow and black. Length, 16 inches; width, 22 inches. Added to the collection in the British Museum in 1898. Fig. 112.

91. Cape which was brought to England on the ship L'Aigle, Captain Valentine Starbuck, March 17, 1824. On this ship arrived Kamehameha II. and his Queen; a member of his suite, the notorious John Rives, procured this cape for Samuel Starbuck, of Milford Haven, South Wales. His grand-daughter, Miss Lucretia Starbuck, is the present owner. Length, 16.5 inches; front, 14.5 inches; neck, 21.5 inches; base, 85 inches. Fig. 113.

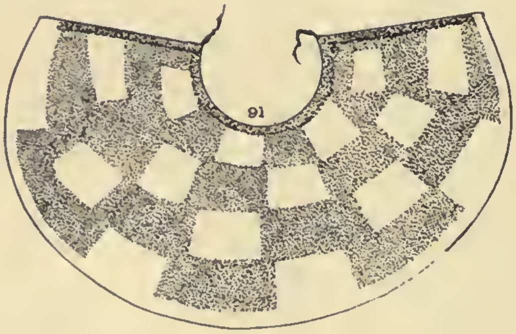


FIG. 113.

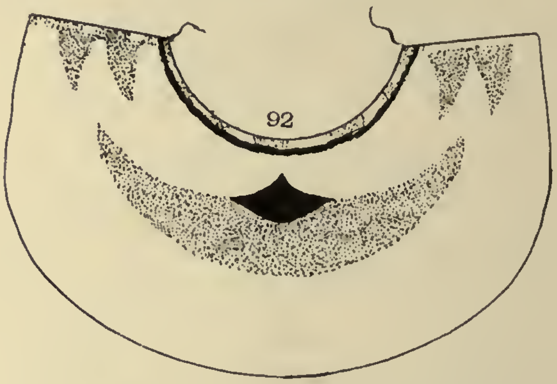


FIG. 114.

92. Cape of oo, with a central crescent of iiwi and a lozenge immediately above it of black oo and two semicrescents of iiwi on each front. Length, 10 inches; front, 6 inches; around base, 45 inches. This, with the cloak following, belonged to H. Colgate, Esq., of Kent Lodge, Eastbourne, England, but I am informed the cloak has been recently sold. Fig. 114.

93. Cloak of iiwi, with crescents and semicrescents of iiwi in almost equal quantity. Length, 51 inches; front, 49 inches; circumference of neck, 22 inches; of base, 132 inches. The front edges have a border of soft, fluffy feathers. Mr. Colgate has recently sold this cloak to some person unknown. Fig. 115.

94. Cape formerly exhibited in the Hall of Curiosities in the Boston Museum on Tremont street, and recently given to the Peabody Museum of American Archæology at Cambridge, Mass. I have no particulars of the cape.

95. Cape belonging to Mr. Samuel Parker of Honolulu. I have not seen this cape, which Mr. Parker tells me is not in good condition.

96. Cape of black feathers with red spots. Seen at the funeral of Queen Kapiolani and supposed to be the one formerly belonging to Mrs. Manuel Reis.

97. Cape, said to be at Elgin, Scotland. I have not been able to obtain any description.

98. Cape, in York, England, but beyond this I know nothing of it.

99. Malo of oo feathers; used as a model for the one so fantastically arranged on the statue of Kamehameha the Great which stands before the Judiciary building in Honolulu. This is the only feather malo or waistband that has come to my notice. There is a photograph of this malo, but taken in such a way as to give little idea of its size or pattern. According to native testimony it is of oo with a border of iiwi, and the decoration of human molar teeth at the ends. The length is about three fathoms, or about a third longer than the ordinary kapa malo. Where it is at present, unless in the possession of Liliuokalani, I do not know.

100. Cape, at St. Augustins, Cambridge, England. Several persons have reported this, but no one has been able to give me more definite information.

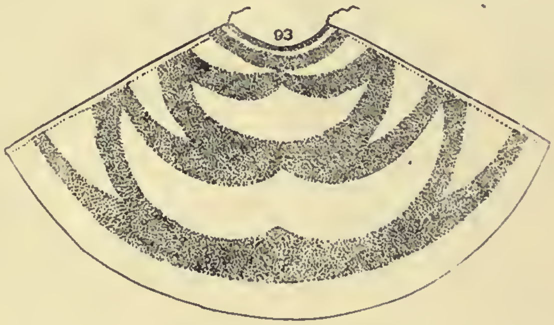


FIG. 115.

September, 1899.

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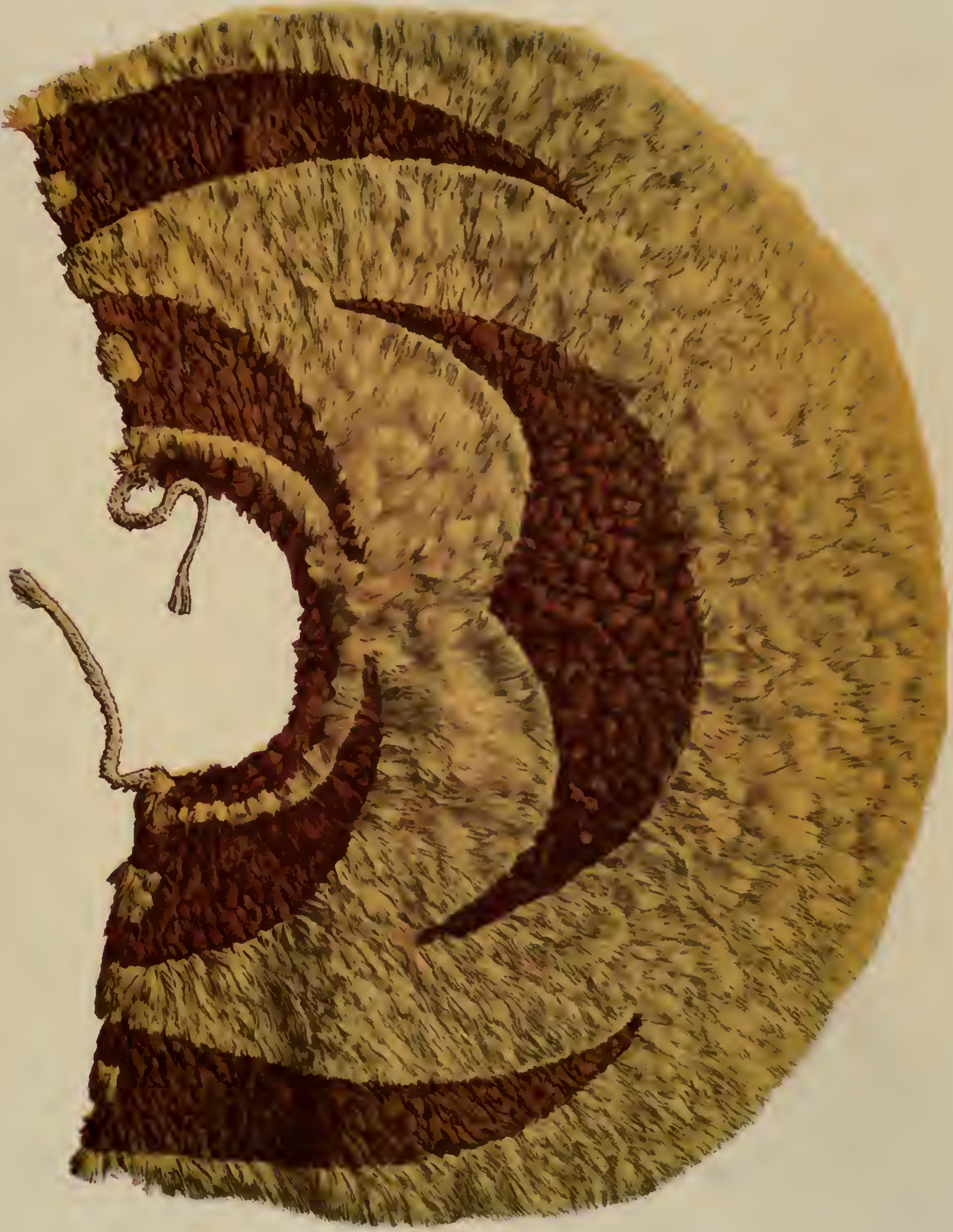
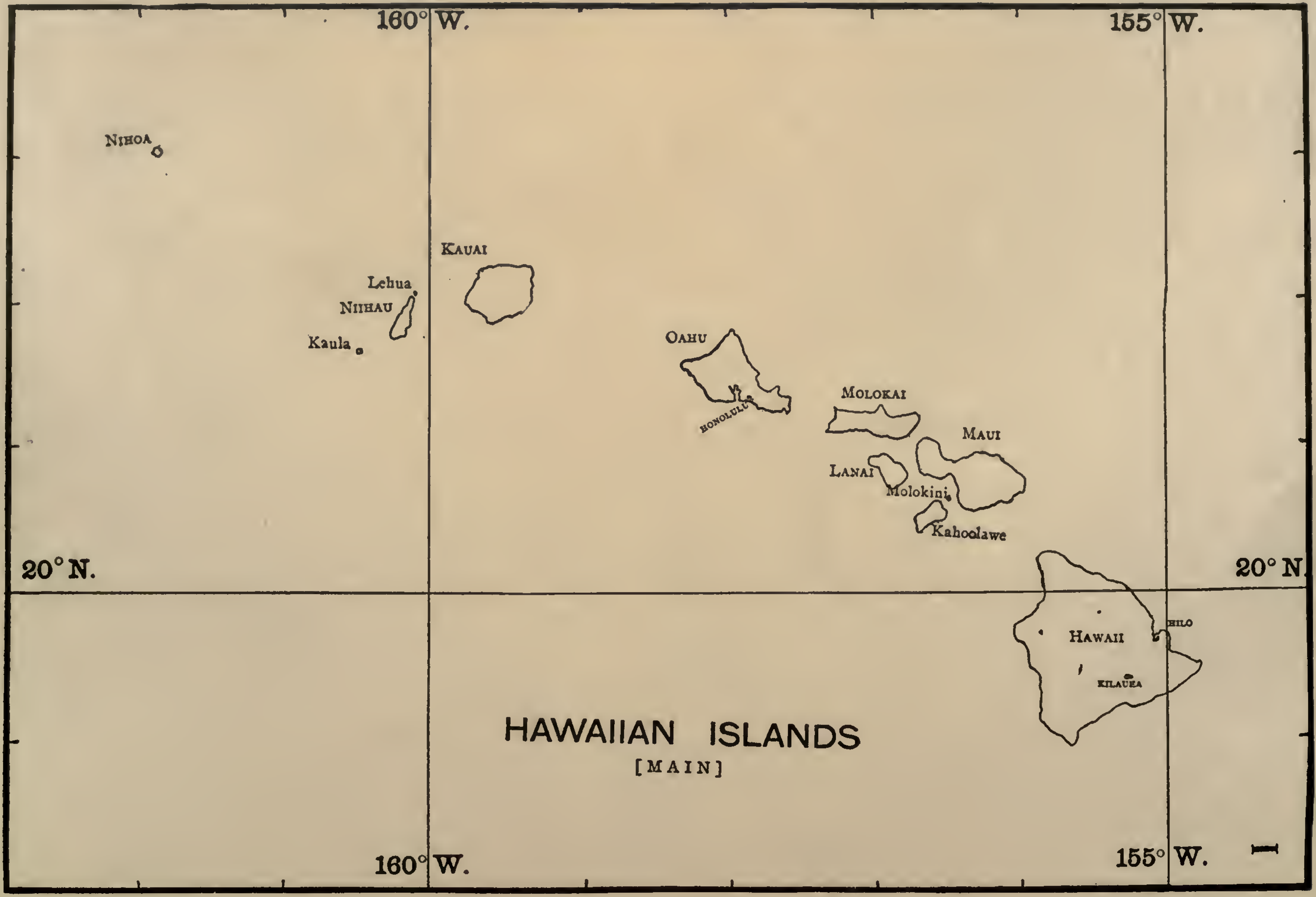


CAPE IN THE BISHOP MUSEUM (NO. 7).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155° W.
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NIHOA
KAUAI
Lehua
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OAHU
HONOLULU
MOLOKAI
MAUI
LANAI
Molokini
Kahoolawe
HAWAII
HILO
KILAUEA
HAWAIIAN ISLANDS
[MAIN]
I

AN

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TO THE

ISLANDS OF THE PACIFIC OCEAN:

A HANDBOOK TO THE CHART ON THE WALLS OF THE BERNICE PAUAHI BISHOP MUSEUM OF POLYNESIAN ETHNOLOGY AND NATURAL HISTORY.

BY

WILLIAM T. BRIGHAM, A.M.

HONOLULU, H. I.:
BISHOP MUSEUM PRESS.
1900.

[85]

ISSUED AT THE INSTANCE OF THE TRUSTEES
OF THE MUSEUM.

PREFACE.

In arranging the Ethnological collections in the Bishop Museum the difficulty presented itself at the outset of a very extensive synonomy of the islands comprised in the region of the Pacific from which these collections are drawn. The orthography was largely undetermined, native names of islands had generally given place to the names of saints or of the vessels which carried their supposed discoverers, and as determinations of longitude are, even at the present day, very uncertain in this ocean, islands were discovered, lost and rediscovered,—as the Solomon Islands were lost for two centuries—and the rediscoverer renamed the bit of land or rock that he found seemingly adrift in the mighty waste of waters.

To show the true relation of the various groups and solitary islands in the Pacific the Director constructed with great care upon the wall of the Polynesian Hall of the Museum a chart extending from 130° East to 110° West longitude, and from the Tropic of Cancer to 45° South in latitude, occupying a wall space eleven feet by twenty. The names given to the islands there represented were in all cases the native names where such were known to exist; where there were no aboriginal inhabitants (as at Wake Island), or where the aborigines had disappeared (as at Pitcairn Island), the name imposed by the first discoverer was preferred. This led to some difficulty as names familiar to some were replaced by less familiar terms: Penrhyn became again the original Tongareva; one Pescadores became Bikini, another Rongelab; Sandwich Island returned to its aboriginal Vaté. As it was impracticable to cover the chart with synonyms the best way seemed to be to print a list of all the names generally applied in charts or voyages in the form of an index, that not only the student might understand the labels attached to the ethnological specimens and groups, but the general visitor to the Museum be able to find an island appearing on the chart under an unfamiliar name.

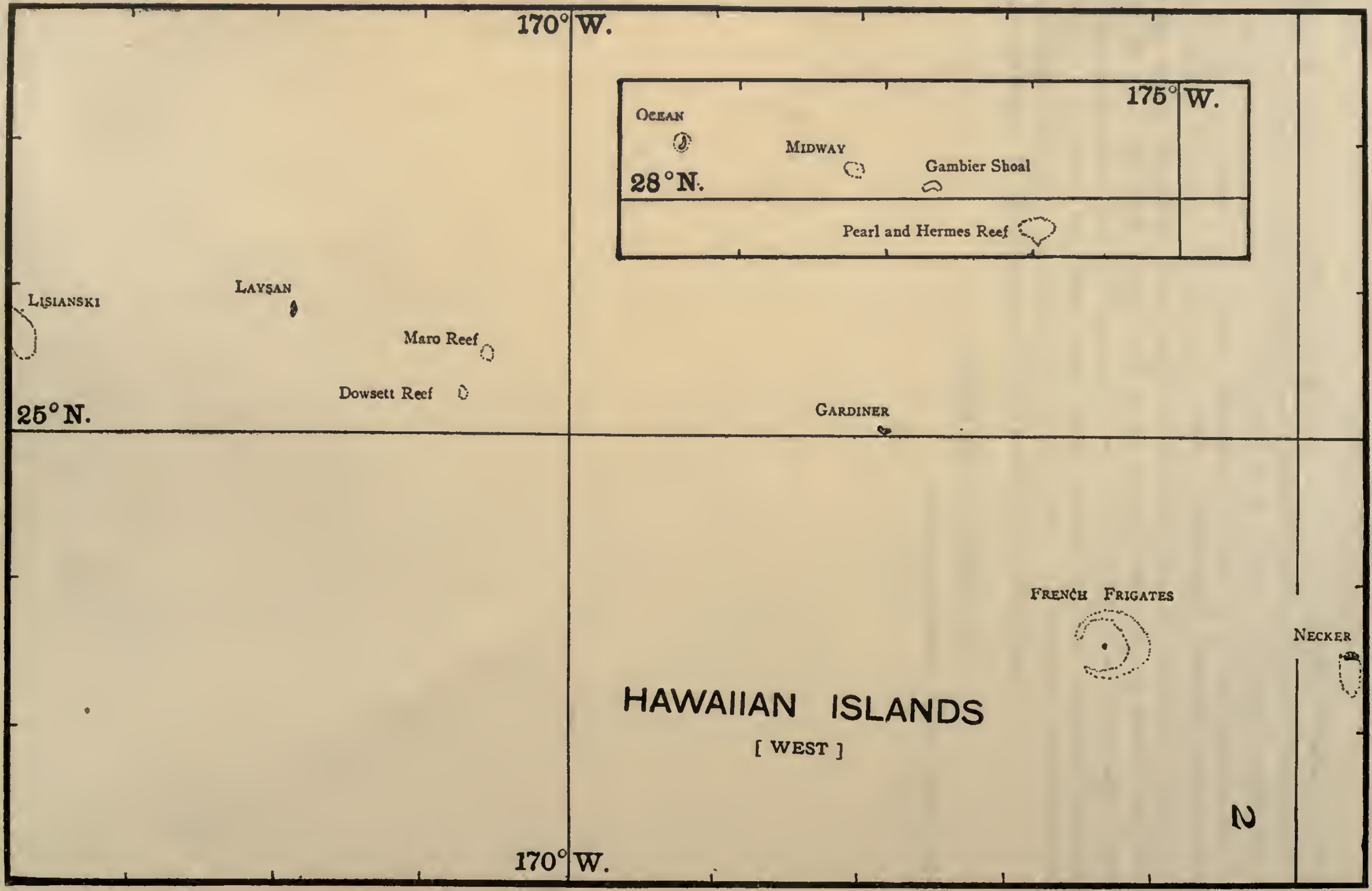
This course appeared convenient, if not necessary, for those who had the arrangement of the Museum in charge that there should be no confusion or variation in the nomenclature of localities; that consistency, at least, if not absolute accuracy might prevail.

In the present state of our knowledge of the geography of the Pacific Ocean, it is not possible to place accurately the position of the known islands of this ocean, still less is it possible to go beyond conjecture in the identification of many of the discoveries of the earlier voyagers. It has not been possible to obtain the true native name in all cases, and indeed in some of the larger islands, as New Guinea, there seems to have been no collective name for the numerous districts comprising the island, and doubtless in a few cases the name of a portion has been applied to the whole. Especially is this the case in the "ring-atolls" where the name of a prominent islet sometimes stands for the whole group. As to the orthography, even the missionaries who have acquired more or less knowledge of the vernacular, do not always agree as in the case of Jaluit which some spell Jaluij. But if one were to wait for perfect knowledge before coming to the public there would be little enough printed, and it has seemed best to print the following pages with all their imperfections, trusting that the better knowledge of others to whose notice they may come will assist in correcting the existing mistakes. Those in charge of this Museum will welcome any addition to their information in these matters.

Although the modern war vessel is sadly unfit for the purposes of scientific exploration, it is hoped that England, America, Germany or France may ere long find national ships to survey the Pacific anew and accurately. The life that Magellan, Mendaña, Cook, Vancouver, and even Wilkes found has almost disappeared; a new and far less interesting order has replaced it. Even the outlines of the coral islets have changed, and in the volcanic region the very bottom of the bays in which the great explorers anchored has sunk or risen as the submarine forces have acted. Europe and America have divided the islands among them, let them now, like wise proprietors, carefully survey and study their new possessions. Here in the midst of the Pacific Ocean we would store for common use all that we may gather from the vast extent of the "Great Ocean".

WILLIAM T. BRIGHAM.

Director of the Bernice Pauahi Bishop Museum.


170° W.
175° W.
OCEAN
MIDWAY
Gambier Shoal
28° N.
Pearl and Hermes Reef
LISIANSKI
LAYSAN
Maro Reef
Dowsett Reef
25° N.
GARDINER
FRENCH FRIGATES
NECKER
HAWAIIAN ISLANDS
[WEST]
2
170° W.

THE ISLANDS OF THE PACIFIC OCEAN.

FOR the purpose of this Index the Pacific Ocean will no longer extend from Bering's Strait to the Antarctic circle and from Kamchatka, Japan, China, the Philippines, Moluccas and Australia to the American coast: the Aleutian and continental islands, the Galapagos and Juan Fernandez on the East with Kurile, Philippine and the archipelago north-west of Australia belong ethnologically if not geographically to another region, and hence the bounds of the Pacific which shall include all Oceanica (except Malaysia) will be on the North the Hawaiian and Bonin Islands, 30°N.; on the East Rapanui or Easter Island, 105° W.; on the South New Zealand and its islets, 55° S.; and on the West New Guinea and the larger portion of Australia, 130° E. Thus defined all minor divisions of this vast expanse of water are eliminated, except the Coral Sea. Shorn of its fringe of seas, gulfs and bays it is still an immense area extending through eighty-five degrees of latitude from north to south and through one hundred and twenty-five degrees of longitude from east to west. We may glance at its history both natural and political, beginning with the latter as best known.

Although the Portuguese followed Vasco de Gama by the Cape of Good Hope and far beyond the Moluccas into what is now known as the Pacific Ocean, it was left to their neighbors and only rivals in discovery, the Spaniards, in the person of the brilliant and ill-fated Vasco Nuñez de Balboa, to reach its eastern shores. September 29, 1513, the brave conquistador, after a terrible journey through Darien, saw the new ocean, and as it was the Michælmas season, in the custom of those days named it Golfo de San Miguel; then marching into its clear and placid waters took possession in the name of His Majesty of Spain. Balboa died soon after (1517), murdered by his father-in-law Pedro Arias d'Avila, and his great discovery profited him little if indeed it was not indirectly the cause of his untimely death.

Another grand man, in many ways not unlike Balboa, Fernâo de Magalhâcs, possessed with the conviction that the continent of America did not, as it seemed to all others, absolutely bar the path to far Cathay, but that there must be a way around if only one could sail far enough to the southward, pushed on with the spirit of Columbus against storms and storm-like men, sailed through the strait which still bears his name, and on November 28, 1520, passed into the wide ocean which in contrast to the rough Atlantic he named *Mer Pacifico.* We know now that storms on this ocean are as formidable as on the Atlantic, but his experience was all the other way and for three months and twenty days he sailed with favoring winds north, then north-west, and finally west, suffering bitterly from scurvy and privation until on March 6, 1521, the green shores of the islands which his sailors called from the misconduct of the natives "Ladrones" were seen, but not until ten days later were the sufferings of the company relieved when they came to the important group since called the Philippines. Then persuaded to aid the petty chief of Zebu in his wars Magalhâes fell miserably on the island Mactan, and his comrades had not even the melancholly privilege of burying his remains. The survivors completed the first circumnavigation of the globe but strangely missed all the islands of the central Pacific and added only the islands of the Marianas to the map of Balboa's ocean.

Next from the west came the Portuguese Jorge Menezes and discovered New Guinea, which only a few months later was rediscovered by the Spaniard Alvaro de Saavedra sent by Hernan Cortez from Mexico to the Moluccas. Saavedra on his return saw islands of the Caroline Group, and in 1542 Ruiz Lopez de Villalobos on a voyage from Mexico to colonize the Philippines saw others of the same group but neither could sufficiently determine the position for identification.

In 1567 Alvaro Mendaña de Neyra discovered the important group which he called *Islas de Salomon* and in 1594 Philip II. gave him a commission as Adelantado. In April, 1595, Mendaña sailed from Callao "*para ir a pacifica y poblar las islas occidentales del mar del sur.*" Although he never again saw the Solomon Islands, he discovered and named the Marquesas Group and came at last to the island of Nitendi or Santa Cruz where he attempted to colonize but died and his survivors quarrelled with the natives until his widow sailed with his remains and what was left of the colony to Manila, where she married the Governor. Not long after the ship of the expedition which carried the corpse of the Adelantado, and which had been driven from the squadron by a storm, followed her to the island of Luzon where it ran ashore, sails all set and rotten, and all hands dead on board, another tragical ending for a discoverer in the Pacific! One of the ships of this expedition disappeared mysteriously in a slight squall one evening and it was supposed that tired of the infelicities of the ill-fated colony her company had deserted and taken the northern route back to Callao. If they tried this long and perilous way, in a ship insufficiently provisioned, they never reached their goal, and as the Hawaiian Group was not far from their probable track, it may have been from this ship that the survivors were thrown on the shore of Hawaii, as told in the native legends.

Francis Drake had in the meantime crossed the Pacific in the "*Golden Hind,*" the first English warship to circumnavigate the globe. He left England December 13, 1577, entering the Pacific in September of the following year, and early in November, 1580, arrived at Plymouth; but his mission was not to discover new lands but rather to vex the Spaniard.

In 1606 Luis Vaez de Torres, a companion of Quiros, coasted the southeastern part of New Guinea and discovered the strait separating that island from Australia which still bears his name. At the same time the more distinguished Pedro Fernandez de Quiros, who had been pilot with Mendaña, discovered the New Hebrides and other islands, among them Sagittaria which Espinosa and others identify with Tahiti. Abel Janszen Tasman sailed by order of the Governor Van Diemen from Batavia in August, 1642, to explore Australia, and in November discovered Tasmania (which he named Van Diemen's Land), in December New Zealand, and in 1643 a part of the Tongan Group. Other Dutch vessels from Batavia made various discoveries along the coast of Australia, and in 1699 the English freebooter Captain William Dampier explored the coast of Australia and New Guinea, leaving memorials of his voyaging in Dampier Archipelago, Dampier Island and Dampier Strait. Jacob Lemaire and Jan Schouten had in 1615 discovered the Strait of Lemaire and Cape Horn (which Schouten named in honor of his native town, Horn). March 1, 1616, they sighted Juan Fernandez and then crossed the ocean to the northern coast of New Guinea.

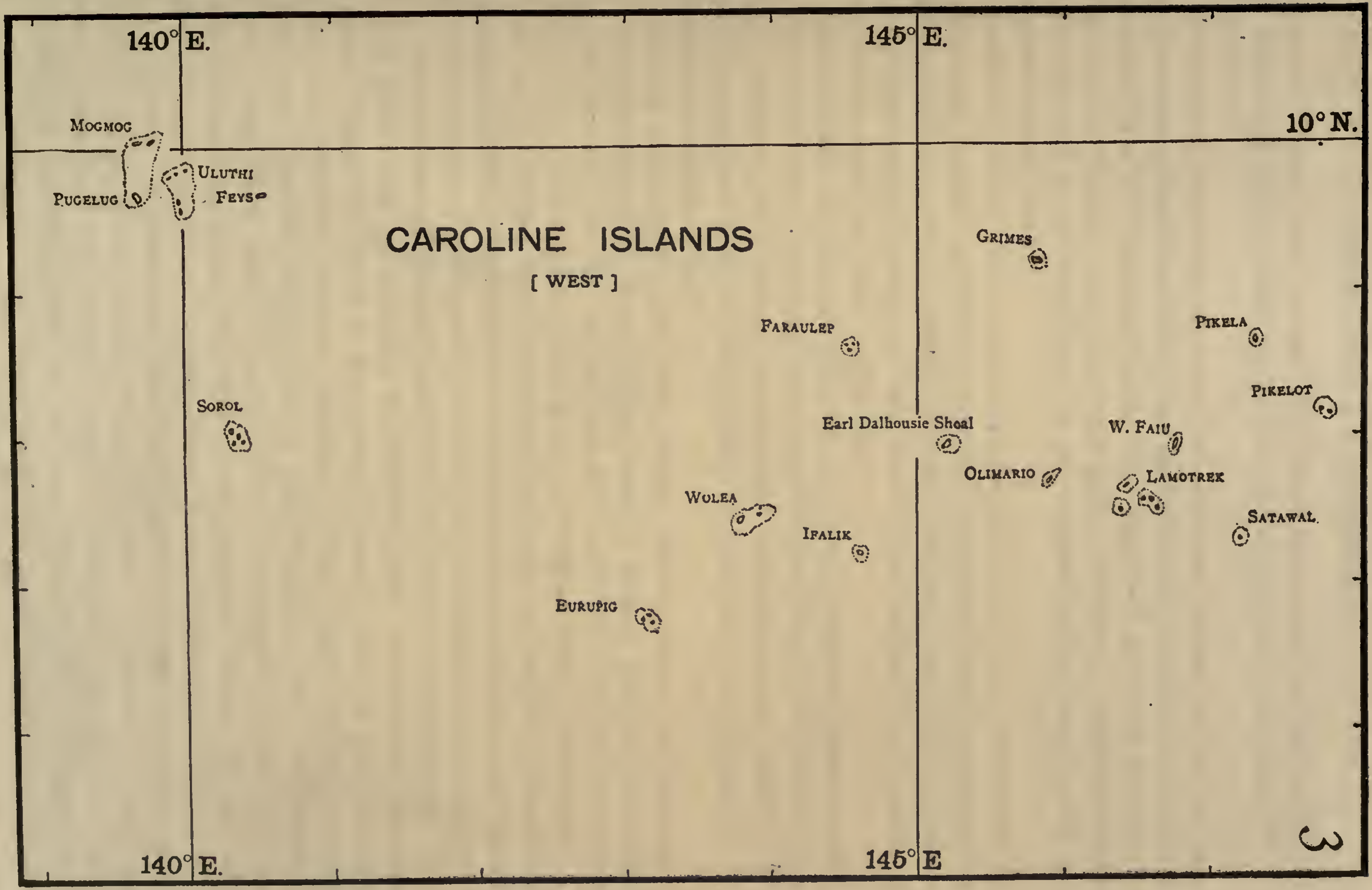
The eighteenth century was destined to reveal more accurately the secrets of the "Great Ocean". In 1721 Jacob Roggewein was sent across the Pacific by the Dutch East India Company and he discovered Rapanui or Easter Island. Lord Anson's voyage (1740–1744) was of a war-like nature, but in capturing the Spanish galleon he captured also the Spanish chart on which were "Las Mesas", a group of islands which Cook searched for on his way north from Tahiti and found in the designated latitude the group which he called Sandwich in honor of his patron, a Lord of the Admiralty. Anson's voyage had a far greater effect than Drake's in turning the attention of the English to the Pacific, and in 1764 Commodore Byron, the grandfather of the poet, crossed it on his voyage around the world, and on his return in 1766 a more formal *exploring* expedition was fitted out with Captain Wallis in the *Dolphin* and Captain Philip Carteret in the *Swallow*. Wallis first determined longitudes in this ocean by lunar distances and thus corrected the charts, which hitherto had but little improved on the early Spanish in that measurement. He rediscovered Tahiti June 19, 1767, and discovered Sir Charles Saunders Island (Tapamanu) in the same group. His colleague Carteret discovered Pitcairn's Island July 2, 1767, and a number of islands of the Low Archipelago. About the same time the French sent Louis Antone de Bougainville on his memorable voyage around the world. He passed the Strait of Magellan and touched at Tahiti eight months after Wallis. He was a distinguished navigator and mathematician, a Fellow of the Royal Society, and had the honor of first carrying the French flag around the world, but his surveys and charts were sadly inaccurate.

All these advance scouts had prepared the way for a series of voyages unsurpassed in the history of maritime discovery: voyages whose record translated into all the principal languages of Europe were the most popular reading of the period, and to this day they are a mine of information concerning the people then dwelling in the islands of the great Pacific Ocean. The transit of Venus excited the greatest interest among the astronomers of that day and the Royal Society prevailed upon the Government to send an expedition to the "South Sea" to make suitable observations. Tahiti was selected as the most desirable place, and a young lieutenant, James Cook, who had distinguished himself at Quebec and in the service generally, was put in command of the *Endeavor* and sailed for the little known island. After exploring the group, which he named "Society Islands" in honor of the Royal Society, he surveyed New Zealand and the east coast of Australia with an accuracy which left little for his successors, then sailed for home through Torres Strait. Brief must be the account in this place of Cook's voyages, but it may be stated that on the second, when the main object was to explore the antarctic region, he sailed in the *Resolution* (460 tons) and discovered New Caledonia and several islands of the New Hebrides. This time he sailed as Captain, and on his return he was appointed Captain of Greenwich hospital with the rank of post-captain. This honorable sinecure he left to command the *Resolution* and *Discovery* on a voyage to discover the "Northwest Passage". Wintering in the Friendly Islands, he discovered the Hervey Group, often called Cook's Islands, and on his way north found the Sandwich Islands, which his countrymen have hardly yet learned to call Hawaiian. It was on his return from an unsuccessful search for the passage between the Pacific and Atlantic that he died at the hands of the Hawaiians at Kealakekua Bay.

Cook's example stimulated the French to renewed efforts, and the accomplished Jean François Galaup de la Pérouse was sent in 1785 to search for the delusive passage. He was in command of the *Boussole* and, with his assistant De Langle on the *Astrolabe*, sailed to the coast of Alaska. The same icy wall blocked their way that had turned Cook back, but on the north-east coast of Asia they made some discoveries. In December, 1788, De Langle, Lamonon the naturalist, and ten of the crew of the *Astrolabe* were massacred on Tutuila of the Samoan Group (named Navigator Islands by Bougainville), but the rest of the expedition reached Botany Bay in January, 1788, and was not heard from after leaving that port.

In 1791 D'Entrecasteaux was sent in search of La Pérouse. He surveyed the Louisiade Archipelago and made some interesting discoveries in that region but died on board July 20, 1793, still ignorant of the fate of his countrymen. Only in 1828 Peter Dillon found the remains of the wrecked vessels on the island of Vanikoro in the New Hebrides.

Lieutenant Bligh, in the *Bounty*, was at Tahiti in 1788, and six months after the famous mutiny broke out and the commander was set adrift in an open boat. In this he made his adventurous voyage to Timor discovering the Banks Islands on the


140° E.
145° E.
10° N.
MOGMOG
PUGELUG
ULUTHI
FEYS
CAROLINE ISLANDS
[WEST]
GRIMES
FARAULEP
PIKELA
PIKELOT
SOROL
Earl Dalhousie Shoal
W. FAIU
OLIMARIO
LAMOTREK
WOLEA
SATAWAL
IFALIK
EURUPIG
3
140° E.
145° E

way. Captain Edwards, who was sent in the *Pandora* to search for the *Bounty*, discovered Anuda and Fataka Islands, but his ship was wrecked on a reef (Pandora Reef) in Torres Strait.

In 1796–97 Captain Wilson, during the missionary voyage in the *Duff*, discovered the Gambier Islands and rediscovered the Duff Group. In the latter year there was great activity in the Australian region when George Bass discovered Bass' Strait, and with Matthew Flinders surveyed the east coast of Tasmania. Captain Flinders continued this work in the *Investigator* but was captured by the French in 1804 and kept a prisoner for six years.

George Vancouver, another great Englishman who had been with Cook in his last two voyages, explored the Pacific (1792–1795), especially on the north-west coast of America, and had much to do with the conquest of the Hawaiian Group by Kamehameha. Only his untimely death soon after his return to England in 1795 prevented his return to the Pacific for farther exploration.

The Russians now took up the task and in 1804 Admiral Krusenstern sailed around the world. From 1815 to 1818 Otto von Kotzebue followed in the *Rurick* discovering a number of low islands in the Paumotus and farther north; while in 1828 Lütke, in the *Seniavine*, surveyed the Carolines. To this nation also belongs the voyage of Bellingshausen in 1819–21.

England continued the work with Captain William Beechey in the *Blossom*, 1825–28; Sir Edward Belcher in the *Sulphur*, 1836–42; Captain Fitzroy (with whom was Charles Darwin) from 1832 to 1836; and Sir James Ross with the *Erebus* and *Terror*, 1841–43; all of the voyages adding largely to the knowledge of the Pacific.

In 1838 the United States Government entrusted to Lieutenant (afterwards Admiral) Charles Wilkes the command of its first and greatest exploring expedition, and under his direction surveys were made of the Hawaiian, Fiji, Samoan, Paumotu and other groups, while the results to Natural Science were even greater than to geography.

The French had not been idle, and mention should be made of the following government voyages in addition to those already noticed. Louis de Freycinet with the *Uranie* and *Physicienne*, 1817–20; Duperrey on the *Coquille*, 1822–25; Dumont d'Urville on the *Astrolabe*, 1826–29; and du Petit Thouars on the *Venus*, 1836–39, made some geographical discoveries and corrected many mistakes of their predecessors, but perhaps their harvest was rather in the realm of Natural History, and indeed with these voyages the discovery of new lands ceased and the efforts of succeeding explorers were directed mainly to investigation of natural phenomena, as in the Austrian voyage of the *Novara*, 1857–59, of which the naturalist Dr. Karl von Scherzer was historian; and the Italian voyage of the *Magenta*, 1865–68, whose story was so well told by another naturalist, Dr. Enrico Hillyer Giglioli. The greatest of these scientific voyages was that of the English in the *Challenger*, 1872–76. The depths of the ocean were studied in this long voyage and at the same time (1873–76) the United States sent the *Tuscarora* in command of Belknap, Erben and Miller, to take soundings for a submarine cable across the Pacific. The British ship *Gazelle* took many soundings in the South Pacific, and the British ship *Penguin* under Commander Balfour has the distinction of reaching the greatest depth in this ocean in 1895, when in latitude 30° 28′ S. and longitude 176° 39′ W. 5107 fathoms were measured. The United States surveying vessel *Albatross* has made no slight contribution to the knowledge of this ocean and its inhabitants of the lower forms of animal life. Before we leave the story of the discoveries in this ocean tribute should be paid to the hardy American whalers who discovered many islands and have left the name of their ship, sometimes indeed their whole ship on the islands they discovered.

The activity at the present time in the examination of the oceanic depths due to the various schemes for laying telegraphic cables will no doubt result in considerable increase of our knowledge of the bottom, and it seems probable that in the next few years the map will be something more than a mere outline.

The story of the great discoverers is a tragic one, as nearly all met a violent death, from Balboa to Dumont D'Urville, and every islet has its romance although often untold by mortal tongue: Defoe did not tell of all the Robinson Crusoes, nor Melville all about Typee. Islands have been found and lost again, men and ships have been lost and never found again; and from the time when the early whalers were said to have hung their consciences upon Cape Horn as they entered the Pacific Ocean, to the later days when the labor pirates disposed of theirs in some equally convenient way, there has been great crime and great cruelty through the islands of this fair ocean. Those usually considered of a higher race who have voyaged through the Pacific have not always been missionaries, nor have they always been true to the traditions of their race. How often have they expressed the utmost horror of the poor untaught cannibals while themselves devouring the souls and lives of those they pretended to detest!

Glancing but briefly at the results of all these discoveries in the province of Natural History we find certain facts that will be a foundation for many theories as to the origin of both animal and vegetable life on the land found here and there amid the waste of waters. First of the great earth cup that contains this greatest of oceans, an expanse of water extending 10,000 miles from Quito to the Moluccas and covering nearly 70,000,000 square miles of the earth's surface.

Depth of the Ocean.—Modern deep-sea soundings have established the fact that the average depth of the Pacific Ocean is greater than that of the Atlantic, and that in it are found the greatest depths yet reached in any ocean. The average height of the continents bounding this ocean is 800 feet, while the average depth of the Pacific is 2500 fathoms, or about three miles below the average continental level.

If an imaginary line be drawn from Honolulu to Tahiti the portion of the Pacific to the east of this line is of comparatively even and moderate depth and there are few islands. West of this line island groups are abundant and the bottom presents great irregularities. Abysmal holes abound and submarine peaks arise in some cases many thousand feet from a depressed plateau. Shallow tracts are said to extend from Patagonia to Japan, and parallel to this occur the wrinkle-like elevations of the bottom on which occur the many groups of islands. The seas that fringe the western boundary of this ocean are separated from the main basin by plateaus of considerable height, although still submarine, and this feature has furnished rather insecure foundation (in our present knowledge) for many theories of animal and vegetable distribution. A matter of considerable interest is the occurrence of deep holes such as that the *Challenger* found between the Caroline and Marianas Groups where the soundings indicated 4475 fathoms, or about five miles and a quarter. Another occurs east of Tonga; one has just been found near Midway Island, and the "deep" along the eastern coast of Japan from 20° N. to 50° N. seems like a long narrow crack in the sea bottom. Other deeps have been charted and the number which bear distinctive names is already considerable, but they can best be studied in the *Challenger* reports and on the more recent hydrographic charts. The shoals seem even more important as they may be inchoate islands.

Currents of the Pacific.—It is certainly known that the vast body of water of this ocean is in a constant state of circulation, and in a way partly independent of the prevailing winds, although, as we shall see below, the winds vary with the seasons as do the main channels of circulation. In this place it is sufficient to mention the great streams or arteries which flow in tolerably determined bounds and in constant direction while we must pass by the less definite currents which are modified by lands, by shoals, or by the winds,—currents which in meeting do not mingle, but the denser or cooler current sinks below and passes beneath its lighter antagonist.

Bering Strait is but a little gateway and admits no important current from the Arctic seas, but on the south from the Antarctic regions a strong current flows north to New Zealand where it is turned eastward to the coast of Patagonia, a branch continuing east past Cape Horn, while the main stream, called in honor of its discoverer Humboldt, passes up the coast of South America until the isthmus of Panama deflects it to the west. As it meets the coast of Formosa it also encounters and travels with a stream analogous to the Gulf Stream of the Atlantic, the Kuro siwa of the Japanese, so called from its dark blue color. Merged with this it flows northeast then east until the Alaskan shores divert it to the south and west. The Kuro siwa has an average maximum temperature of 86° F., or about 12° greater than that of the waters of the ocean through which it passes. Narrow near Formosa, it gradually broadens until north of the Bonin Group it is 500 miles wide. Between the two great equatorial currents flowing westward on either side of the equator is a narrow counter-equatorial current flowing to the east. Still farther observations on the currents are needed, for their influence, although of less interest to navigators in these days of steam-propelled vessels has most important bearing on the peopling of the different groups.

The cases of Japanese junks recorded as drifting to the Hawaiian Islands and to the north-west coast of America have often been referred to, and it is well known that the inhabitants of the Alaskan Islands obtain much of their fuel as driftwood from the Asiatic coast: it should also be noted that many of the largest and most famous double canoes of the Hawaiians were hewn from logs of Oregon pine brought to the shores of Niihau and Kauai by the waves. I myself saw dozens of such logs in 1864, some of great size, some bored by Teredo, others covered with barnacles, along the shores of Niihau. To the same shores are brought lumps of fine pumice which the ancient Hawaiians freely used to polish their canoes and wooden dishes.

Winds of the Pacific.—In some considerable measure accelerators if not originators of oceanic currents are the prevailing winds. The two agencies combined have had a large part in the distribution of animal and vegetable life through this ocean. In the eastern half of the Pacific, which is comparatively free from land, the north-east trade winds blow with marked regularity as far south as the equatorial belt of calms which encircles the globe nearly parallel with the equator, and in the southern hemisphere the south-east trade winds blow as regularly to the same belt where they rise and return in the upper regions to the polar seas whence they came. Such is in general the plan of air currents in the open ocean of the eastern half, but the north and south limit of each of these trade winds varies with the season, and wherever islands occur a variation results not always easy to explain: even the very low coral islands are quite sufficient to change the force and direction of the trade winds, substituting a land and sea breeze system. The following table, taken from Kerhallet, will show clearly the variation of the "Trades":

A TABLE OF THE LIMITS OF THE "TRADES" AS AFFECTED BY CHANGE OF SEASONS.

	POLAR LIMIT		EQUATORIAL LIMIT		BREADTH OF THE INTERVENING ZONE OF CALMS.
	OF THE NE.	OF THE SE.	OF THE NE.	OF THE SE.	
January	21° 0′ N.	33° 25′ S.	6° 30′ N.	3° 0′ N.	3° 30′
February	23 28	28 59	4 1	2 0	2 1
March	29 0	31 10	8 15	5 50	2 25
April	30 0	27 25	4 45	2 0	2 45
May	29 5	28 24	7 52	3 36	4 16
June	27 41	25 0	9 58	2 30	7 28
July	31 43	25 28	12 6	5 4	7 1
August	29 30	24 18	15 0	2 30	12 30
September	23 29	24 51	13 53	8 11	5 45
October	23 6	23 27	12 20	3 32	8 48
November	25 0	28 39	... ...	... ...	... ...
December	24 0	22 39	5 12	1 56	3 16

The division of the trades on the belt of the "Doldrums" is always to the north of the equator, perhaps owing to the unequal distribution of land and water in the two hemispheres, for representing land by 100 the proportion of water in the north hemisphere is 150 while in the south it is 628. Over the doldrums, at a great height, hangs a belt of cloud formed by the opposing currents of different temperatures.

Formerly it was believed that the trade winds extended over the entire breadth of the Pacific, but although additional data are needed, enough are at hand to show that this is true only of the region extending between the Galapagos and the Paumotus, or from 90° to 150° west longitude, less than half its extent so far as the SE. trade winds are concerned: the NE. trades blow as far west as the Mariannes. We fortunately have tables of wind observation from two points in the western course of the northern belt of wind. At Jaluit in the Marshall Group (169° E.) Dr. Steinbach has made the observations given in the following table:

TABLE OF THE DIRECTION OF THE WIND AT JALUIT, MARSHALL ISLANDS, FOR THE THREE YEARS 1892–1894 AS OBSERVED BY DR. STEINBACH.

(The figures are percentages.)

	N.	NNE.	NE.	ENE.	E.	ESE.	SE.	SSE.	S.	SW.	WSW.	NW.	NNW.	CALM.
January	1	0	47	22	9	6	6	0	0	1	0	0	0	8
February	2	2	34	27	16	7	5	0	2	0	0	0	0	5
March	0	0	35	31	17	6	5	0	0	0	0	0	0	6
April	0	1	20	34	25	7	6	2	0	0	0	0	0	4
May	0	0	13	30	29	7	4	1	1	1	0	1	0	14
June	0	1	14	33	29	4	4	3	0	0	0	0	0	11
July	1	0	9	21	28	12	6	1	1	0	0	1	0	20
August	0	1	12	26	25	11	8	2	1	0	0	0	0	13
September	1	0	5	16	15	10	15	9	1	1	0	0	1	25
October	0	1	5	11	18	17	24	12	2	1	1	1	0	8
November	0	0	15	24	18	14	14	3	1	1	0	1	2	6
December	1	1	46	22	13	8	4	1	0	1	0	0	0	4

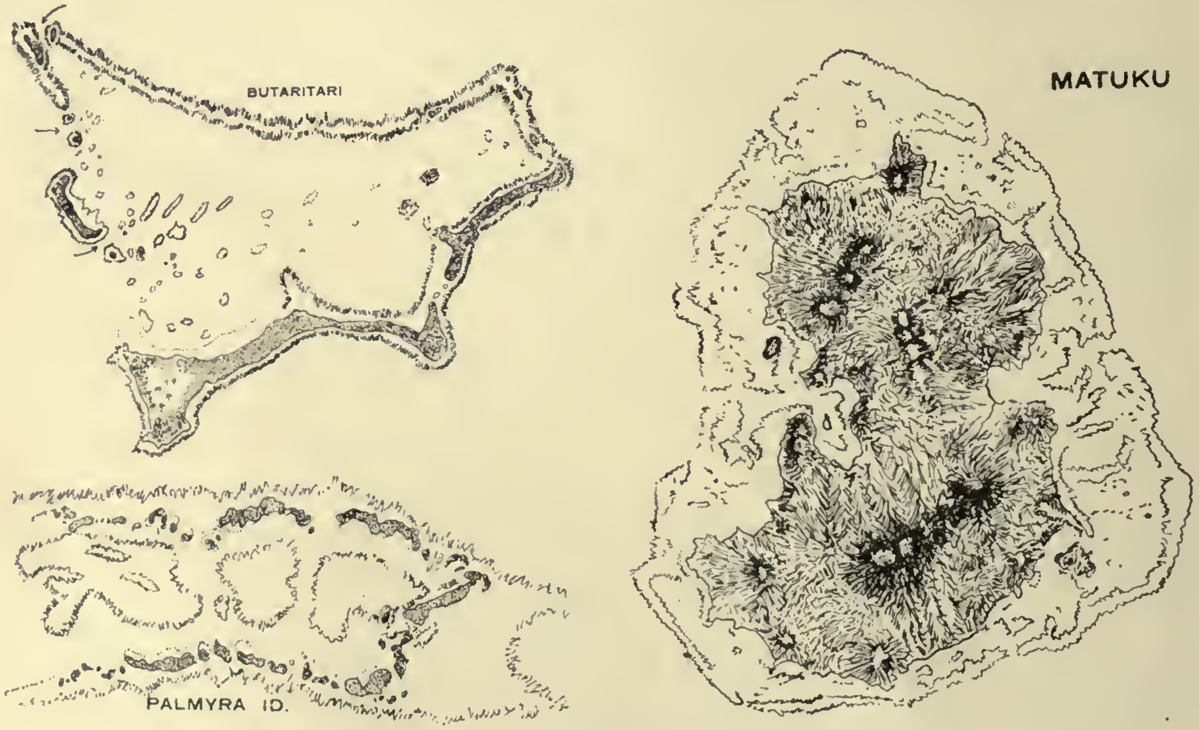
At Ponapé in the Caroline Group (158° E.) Mrs. L. H. Gulick, of the American Mission, kept a meteorological record for several years. From this the winds for the year 1854 are shown as follows:

MONTHS	DAYS OF TRADE WIND.	DAYS OF VARIABLE WIND.	DAYS OF CALM.	MONTHS.	DAYS OF TRADE WIND.	DAYS OF VARIABLE WIND.	DAYS OF CALM.
January	29	2	0	July	11	11	9
February	28	0	0	August	7	24	0
March	23	8	0	September	11	16	3
April	29	1	0	October	6	10	14
May	29	2	0	November	15	15	0
June	22	8	0	December	29	1	0

Among the islands between the Australian coast and the Paumotu Group the SE. trade winds are only felt during the winter or between March and October. In the belt of calms storms and abundant rains are not uncommon. South of the Tropic of Capricorn are found the *anti-trades* blowing from the NW. or W. with considerable regularity, and north of the Tropic of Cancer blows the SW. anti-trade. This SW. wind coming over the vast area of northern Asia is a cold dry wind, but when it crosses the warm stream of the Japanese current it condenses the tropical vapors brought by that stream from the south and thus causes almost perpetual fog: as it strikes the Alaskan shores it is a warmer rain-bearing wind. In the western Pacific *monsoons* take the place of the trade winds, blowing half of the year in one direction but reversing the direction during the other half. The change of monsoons is much dreaded asprolific of storms.

Hurricanes seldom occur in the open Pacific, but in the region of Samoa and Fiji and farther to the west are far from uncommon. The whole of the north-west portion between 20° and 45° N. is subject to cyclonic storms called typhoons. A capital review of these storms, both hurricanes and typhoons, is to be found in *Segelhandbuch für den Stillen Ozean* of the German Hydrographic Board, Hamburg, 1897.

Climate.—From the great range in elevation from the coral islet over which the storm waves break to the heights of the island of Hawaii where the volcanic peaks closely approach the line of 14,000 feet; from the winds of constant direction in the eastern half to the fickle airs of the Solomon Islands: there is even in the main portion of Oceania which is within the tropics a great variety of climate. In the trade wind regions the moisture brought in the breezes is mainly precipitated on the windward side of high islands leaving the lee side often dry and desert-like, while where the monsoons prevail both sides get a share of the rain and the vegetation is more luxuriant and uniform. Indeed the rain is often superabundant on some groups of the western Pacific, as the early Spanish navigators found to their disgust, for in those days the seamen had no proper shelter and had to cook their food on the open deck. The dry climate of the Hawaiian Islands where the natives could wear bark cloth had its counterpart in the cool and wet New Zealand where the same Polynesian had to make his garments of the warmer and more durable flax which he ingeniously made water-proof. New Zealand and its dependencies alone extend beyond the tropics, and



CORAL ISLANDS. FIG. 1. HIGH ISLAND.

in the southern part of that noble group the southern Alps vie in beauty and majesty with the better known Swiss mountains. Perhaps nowhere in the world outside of the Pacific can so great a variety of climate be found. Tables of rainfall, maps of isothermic lines can be given of some parts of the Pacific region, but the record is too imperfect and as yet covers too narrow a territory to make it worth while to reproduce here.

Island Forms.—A marked difference exists between islands in our region: some rise high above the ocean presenting conical peaks more or less eroded into radial valleys; the peaks and slopes generally, at least on the windward side, covered with dense vegetation; while the second class consists of a low sand bank not more than a dozen feet above the ocean and only visible to the approaching vessel by the lofty coconut trees. Of the former class are the Hawaiian, Samoan, Society Groups, and most of the western islands, while to the latter class belong the Paumotus, Gilbert and Marshall Groups: the two forms are sometimes combined as at the Fijian Group. So far as known all the high islands of the central Pacific and most of those in the west are volcanic.

Volcanic Systems.—All along the shores of the Pacific are active volcanoes. Commencing with the little known volcanoes of the Antarctic region, of which we may hope to learn more in view of the present interest in Antarctic exploration, the Andes continue the line with some of the loftiest in the world near the equator. Central America presents volcanoes of great variety and interest, mostly detached and not in mountain chains. Mexico with her Coseguina and others less active in modern times, while Shasta, Ranier and Baker carry the line northward until it takes to the water in the Alaskan Islands and crosses to the fine ranges of Kamchatka, then through Japan, the Philippines to Java and Sumatra where it leaves this region. With such a wall of fiery sentinels it is not surprising that the enclosed space should bristle with similar volcanic and seismic phenomena. Hawaii on the north-east seems to be a prolongation of the Mexican line which is marked by Colima, Popocatepetl and Orizaba. It is a line of volcanic action extending nearly a thousand miles, although the portion to the north-west has long been extinct. At the extreme southwest is the largest active crater in the world, Kilauea, which has given its name to a remarkable type of *pit crater*. The Marquesas, although volcanic, present no craters and have long been extinct: and this is true of the Society Islands, but their near neighbor the Tongan Group is still active and submarine volcanoes break out, form islands of loose cinders, and soon are converted to shoals by the waves. New Zealand contains several grand volcanoes and its volcanic phenomena in the way of hot springs are noteworthy. The "Terraces" on the North island were the most beautiful in the world until destroyed by the eruption of Tarawera (in June, 1886). In the New Hebrides are several smaller active vents; one of them, on Tanna, has been constantly active, like Stromboli, at least since the time of Cook. The Solomon Islands and the Bismarck Archipelago are fully volcanic, eruptions frequently occurring in some part of that territory. A region of such marked volcanic character might be expected to exhibit the concomitant phenomena of earth movements, both earthquakes and the grander if less obtrusive movements of elevation and depression, and it was the latter change in level that gave Darwin the foundation of his ingenious theory of the formation of

Coral Islands. — Most important, both from a geological and a zoological standpoint are the buildings of the coral-forming polyp. Throughout the portion of the Pacific between the dotted lines on the diagram of this ocean (Fig. 2) this minute animal has by the force of numbers greatly increased the area of habitable land, made harbors possible, and changed if not created currents in the equatorial sea. This is not a work now complete or of paroxysmal or intermitent nature, but it is a work of the present day, like the æolic erosion of valleys and shows no sign of diminution.

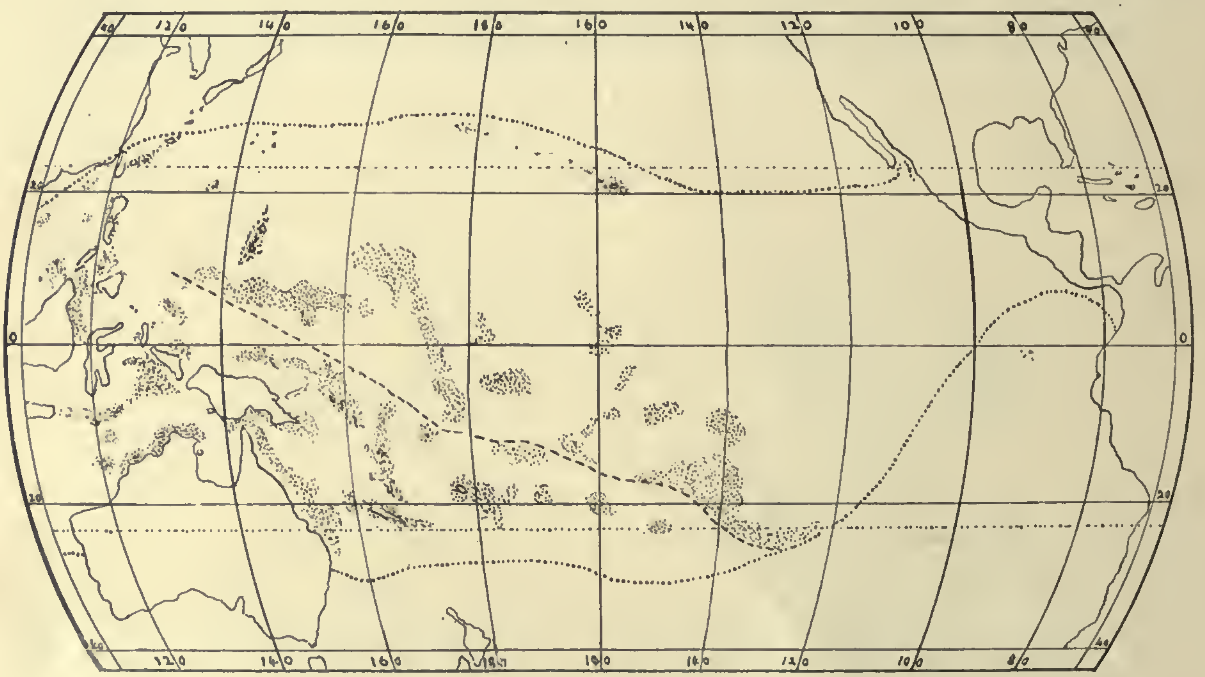
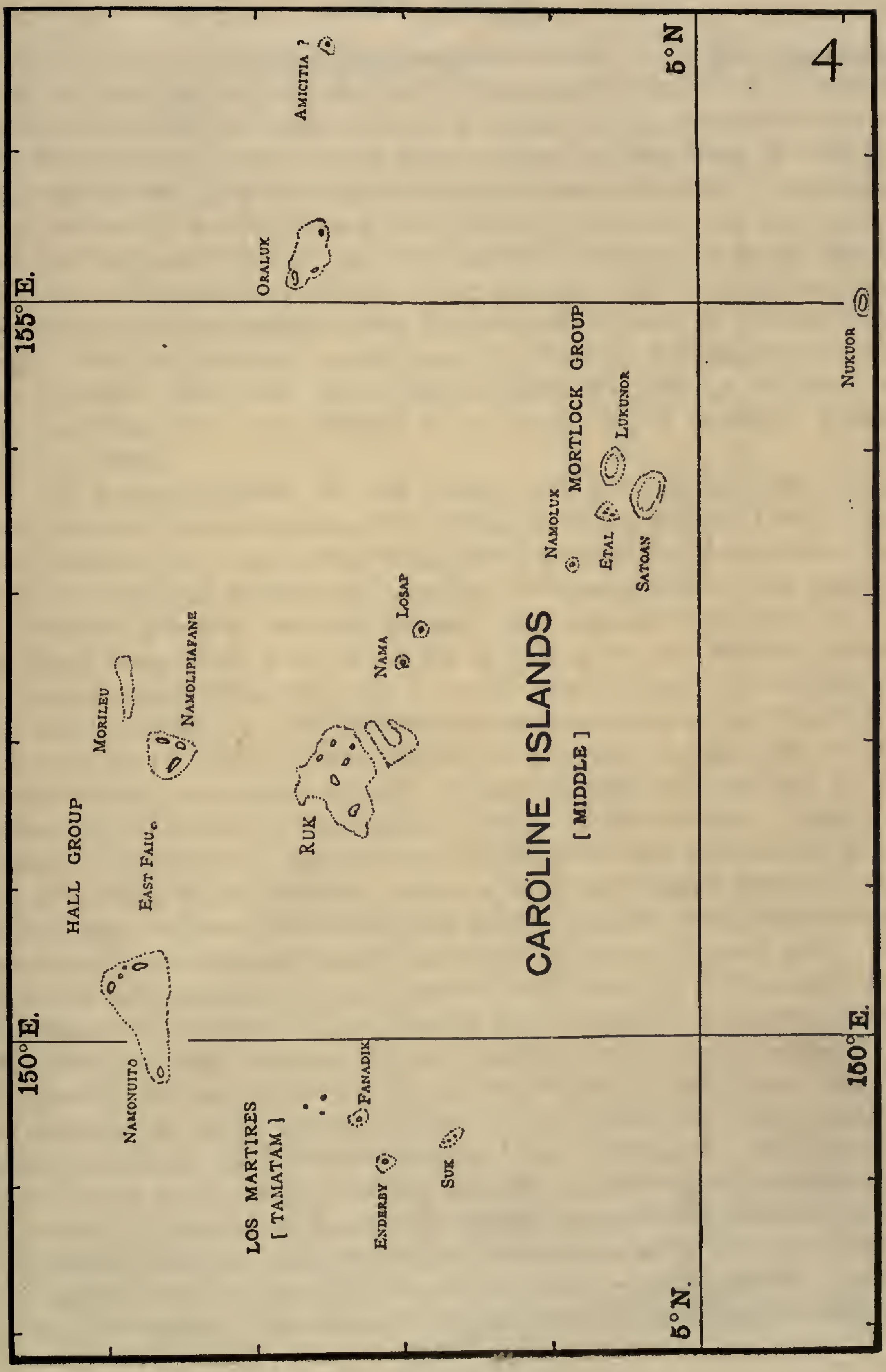


FIG. 2. DIAGRAM OF ISOCHRYMES BETWEEN WHICH REEF-CORALS OCCUR.

While the other great agency in the formation of the intra-Pacific lands, vulcanism, seems to be diminishing from Hawaii to the Solomon Islands, the coral polyp, all unconscious, it may be, as the volcano of its mighty work, goes on building up reefs which in time become habitable islands.

As a certain degree of warmth is needed for the life as well as growth of reef-forming corals, and not all corals come into this class, the boundaries of the coral region both north and south of the equator will be determined by the *isocryme* (or line of equal cold) of 68° F., colder water preventing their growth, and their activity increasing with the mean temperature. In the hotter water under the equator the tem-


4
CAROLINE ISLANDS
[MIDDLE]
150° E.
155° E.
5° N.
HALL GROUP
Namonuito
East Faiu
Morileu
Namolipiafane
Oraluk
Amicitia ?
Ruk
Nama
Losap
Mortlock Group
Namoluk
Etal
Satoan
Lukunor
Nukuor
Los Martires
[Tamatam]
Fanadik
Enderby
Suk

100

perature is 85° F., or two degrees higher than in the Atlantic. The mean temperature for the year is, in the North Pacific 73.5° F.; in the South Pacific, 70° F. Where the temperature of the surface is never below 70° F. during the year, that is within 15°–20° of the equator, the reef corals abound both in species and individuals, as at the Fiji Group, which is one of the most remarkable coral gardens of the ocean. The Hawaiian Islands are near the northern limit of subtorrid warmth and only the hardier forms are found (as *Porites* and *Pocillopora*) and their growth is not so luxuriant: the beautiful *Madrepora* of the southern groups is wholly wanting. This brief reference must suffice to indicate the important factor that temperature makes in the distribution of reefs. Corals will not grow in muddy water, or when the percentage of salt falls below a certain point, hence their absence opposite the discharge of rivers. In depth the living corals (reef-building) do not extend beyond twenty-five fathoms or 150 feet (Dana).

The Hawaiian Islands are well provided with fringing reefs but have no barrier reefs, and these two forms are thus distinguished: the former is a fringe or extension around or on certain coasts of a high island, presenting a tolerably flat surface at low tide, interrupted by wells and channels; the latter is detached from the shore by a channel of greater or less width, and may form a wing encircling the island, or it may extend along a coast as the Great Barrier Reef of the east coast of Australia which extends parallel with that coast some 1250 miles. What is the explanation of these detached reefs? It is not so difficult to understand the growth from a shore as the polyp grows, comes too near the surface, is exposed too long at low tide, dies and its successors have to push seaward. On most fringing reefs the dead far outnumbers the living coral. If coral, probably from a deficiency of light, cannot grow at a depth below twenty-five fathoms, how could a detached mass start from the bottom of an ocean which in the immediate vicinity of most coral islands presents a much greater depth? Charles Darwin explained this in a very simple way and his conclusions, with all their consequences, were accepted as satisfactory for many years. It is well known that changes of level take place in "solid" land. On the Hawaiian island Oahu the ancient coral reef is now from two to three fathoms above the level at which it was formed not many ages ago, and other regions have as evidently subsided. In this subsidence Mr. Darwin finds the key to the formation of barrier reefs. Granted the subsidence this theory capitally explains all the phenomena of reef formation. Agassiz, Dr. Murray and Professor Alexander Agassiz (feeling that the subsidence theory was not proven for all localities) base their explanation of the barrier reef on the growth of the coral on the rim of a volcanic crater at a suitable depth. There is this difficulty that some of the atolls in the Indian Ocean would presuppose a crater thirty miles in diameter, a size which has no parallel on the earth's surface. Interest has lately been excited in this question by the borings on the coral island of Funafuti, and by the renewed explorations of Alexander Agassiz, but at the present writing the evidence is not conclusive on either side.

Without adopting either theory we may state that coral islands have a fringing reef more or less interrupted, sometimes a barrier reef, while the island in many cases becomes simply a ring of circular or irregular form, and the enclosed space is called a lagoon in the atoll. An opening into this lagoon may convert it into a good boat harbor, or the continuity of the ring and the growth of coral or the wash of sand and debris may fill the lagoon converting it into a simple coral island with a fringing reef. Many islands have simply a depression in the centre marking the former lagoon. Atolls have often many islets inhabited on the ring, while other islets rise from the shallow lagoon.

From the organic nature of the reefs they are constantly changing, and the change is generally a growth: hence channels become shallower and unless kept open by some fresh water stream finally close; lagoons which have served for harbor to vessels of light draft become dry land. Coral rock is easily cut and artificial channels can often be cut to good harbors, and the apparent scarcity of such havens in the central Pacific may be remedied. The growth of coral patches off harbors and in channels is a serious danger to navigation and requires frequent surveys. The rate of growth of coral reefs is not yet satisfactorily determined. Darwin's *Voyage of the Beagle*, and Dana's *Corals and Coral Islands* may be consulted for farther information as to the growth of corals. In regard to the geographical distribution of reefs it may be briefly stated that there are no reefs on the South American coast, and only detached corals in the Panama region. Easter Island is without reefs, so is Pitcairn, although there are some growing corals about the latter, while the neighboring Paumotus consist of eighty coral islands, nearly all with lagoons; the Marquesas have little coral about them; the Society Islands and Fiji abound in reefs. The Samoan and Tongan are well provided with reefs, although in the former group Tutuila has less coral than Upolu. Of the Hawaiian Islands Kauai, Oahu and Molokai have extensive reefs, while Maui and Hawaii have very little except detached corals; Necker and Nihoa have none, but farther toward the west are many reefs. The Gilbert, Marshal and Caroline Islands are almost entirely coral. The Marianas are actively volcanic in the northern portion where there are no reefs, but the southernmost Guam has extensive reefs; so have Yap and the Pelews. The New Hebrides again are actively volcanic and have few reefs, while New Caledonia abounds in them. The Coral Sea and Great Barrier reef continue the line southward. The Louisiade Group and the Admiralty Islands have barrier and fringing reefs, while the north coast of New Guinea which is fringed with volcanic islands has no reefs. Of the Solomon Group only the western portion has extensive fringing reefs. As to the extent of all the reefs in the western Pacific there is great lack of trustworthy information.

Flora.—On the shores of nearly all the islands in our region are found a few plants common to all tropical countries, and which are easily dispersed by currents. They belong to the families Malvaceæ, Convolvulaceæ, Solanaceæ and Leguminosæ, and are of little interest. This association of plants is often called the madreporic flora. In the low islands of the Pacific there is little else for the botanist; add the ubiquitous pandanus, coconut and mangrove and the tale is told. In the high islands the interesting and peculiar flora begins at the height of about 1200 feet, and it is this flora that contains all the species peculiar to the islands.

In the many shaded and moist valleys of Polynesia ferns find a congenial home, and from the lightness of their spores are easily distributed; hence the Polynesian flora presents 15% of ferns. Other predominant plants are provided with especially light seeds as in the families Urticaceæ, Rubiaceæ, Lobeliaceæ and Orchidacæ. The last family counts many species in Fiji and the Society Islands as well as in Australia, while on the Hawaiian Group only three small species are found. On the other hand, of the Lobeliaceæ none are found in Fiji, three only in the Society Islands, while on the Hawaiian Islands are found more than fifty species. Most of the Polynesian vegetation is woody; annuals form only 1%, and most of these are strangers confined to the shores.

The question of the origin of the plants on isolated groups is of great interest, but its discussion would carry us far beyond the limits of this introductory chapter. It will be found, however, that the widely disseminated plants are either provided with wings or other suitable appendages for the wind-borne journey, or are attractive food for birds of passage. In the stomachs of pigeons killed in Micronesia have been found the seeds of Fijian plants. The lantana (*L. camara*) was cultivated for years in gardens in the Hawaiian Islands but it showed no tendency to spread until the so-called mina (*Acridotheres tristis*) was introduced, when the berry became its favorite food and the indigestible seed was scattered everywhere. Cosmopolitan species are introduced by winds and currents, hence a study of these will explain many cases. Rare American plants are almost confined to the Hawaiian Group, the nearest to that continent and in the line of the NE. trade winds.

Of the flowering plants the proportion to the whole flora is in south-eastern Polynesia 20%; in Fiji, 40%; and in the Hawaiian Islands, 80%. The affinities of the plants in each group are instructive. About 500 species are common to Asia and tropical Australia. Some 220 species are common to New Zealand and Australia. Of the two species of *Ranunculus* found on the Hawaiian Islands, one resembles *R. sericeus* of Mauritius; the other, *R. repens* of America. Fiji has one species each of three Asiatic genera, *Ternstrœmia*, *Saurauja* and *Eurya*. Hawaii and the Marquesas have each a species of the distinctively American genus *Waltheria*.

If we look rapidly at a few of the more important families we shall find that the Leguminosæ are not common in Polynesia; of the genus *Acacia* all the species peculiar to this region are phyllodineous and the rest of this peculiar group is Australian. Among Rosaceæ the genus *Acaena* has one species peculiar to the Hawaiian Islands while some thirty other species are South American. Of Pittosporaceæ the genus *Pittosporum*, which is Australian in large part, has twelve species in New Zealand, ten in the Hawaiian Islands, six in Fiji, and one in Southeastern Polynesia. The family Rubiaceæ contains 7% of the flowering plants peculiar to the Hawaiian Islands, 14% of those peculiar to Fiji, and in New Caledonia some two hundred species are reported. In all the islands there are three hundred species, while Australia has scarce one hundred. There are several curious Compositæ in the Hawaiian Islands, *Wilkesia*, *Argyroxiphium* and *Remya*. The genus *Lipochæta* has one species in the Galapagos while twelve are Hawaiian. Of the Campanulaceæ, besides five species of *Lobelia*, there are five genera, *Brighamia*, *Delissea*, *Rollandia*, *Clermontia*, and *Cyanea* peculiar to the Hawaiian Islands, and another *Apetahia* peculiar to the Society Islands: the family is not found beyond those two groups in Polynesia: the centre of the Lobeliaceæ is American. Of the Urticaceæ the genus *Ficus* has a dozen species peculiar to Fiji, twenty-three (all but six peculiar) in New Caledonia. The Palms are all related to the Malaysian flora. In the Filices the relationship is well shown in the following table taken from Drake del Castillo:

TYPE.	FIJI.	CENTRAL AND EAST POLYNESIA.	HAWAII.	ALL OCEANIA.
Asiatic	59 p. c.	50 p. c.	13 p. c.	32 p. c.
Australian	3	2	1	2
New Zealand	3	2	4	3
American	9	20	26	18
Cosmopolite	26	26	32	44

The paucity of edible fruits is a feature of the Polynesian flora as is also the absence of poisonous plants on most of the islands. Although not rivaling the American economic woods in variety or beauty, there are nevertheless many choice timber woods in the Pacific Region. The koa of Hawaii, the kauri of New Zealand, the kou and kamani of the southern islands, and the eucalypti of Australia are both beautiful and valuable, although many are fast disappearing and I know of no serious attempt to cultivate them.

Throughout Polynesia proper the Kalo (*Caladium esculentum*) was the staple vegetable food, varied, in the southern islands with the Breadfruit (*Artocarpus incisa*), and to the west, especially on sand islands and in Micronesia, the fruit of the *Pandanus odoratissimus* is an important addition to the dietary. Bananas, yams, sugar-cane, kukui nuts, Canarium nuts, the fruits of some Myrtaceæ and Vaccinieæ were the principal fruits of the ancient Pacific-islander: all the fruits that now abound in the gardens and orchards have been brought since the time of Cook.

For farther information on the Flora one may consult *Remarques sur la Flore de la Polynésie par* E. Drake del Castillo, Paris, 1890; *A Lecture on Insular Floras*, by

J. D. Hooker, London, 1868; also Dr. Hooker's admirable *New Zealand Flora;* Mann's *Enumeration of Hawaiian Plants; Die Vegetation der Erde*, by A. H. R. Grisebach; *Introduction to the Botany of the Challenger Expedition*, by W. B. Helmsley.

Land Fauna.—In eastern Polynesia rats and mice were the only indigenous mammals, but to the west the wonderful Marsupials of Australia and New Guinea, the fruit-eating bats and some small and comparatively unimportant mammals extend the list slightly. Reptiles are not more abundant. New Zealand and the Hawaiian Islands have no snakes. Samoa, Fiji and Micronesia have a few harmless forms; while Australia has numerous deadly species. Crocodiles are found in Queensland and on some of the islands not far distant, and the lizards of Australia are of many species and sometimes of considerable size. New Zealand has the curious Tuatara (*Hatteria punctata*, Gray), but as we go eastward the species and individuals diminish until on the Hawaiian Group there are but six small species of lizard, and these are disappearing before the introduced mongoos. Of the birds New Guinea has the remarkable Birds of Paradise, and Australia has many and most interesting species. New Zealand has the Kiwi, a remnant of some of the most wonderful birds, now extinct, that have ever lived. Samoa has another survival in the *Didunculus*, but again as we go east the birds grow scarce. In insect life the rule holds good and the fine butterflies and gigantic beetles of New Guinea give place to one or two diurnal lepidoptera on Hawaii, where the insect fauna has been well worked and although of great interest to the entomologist has little to interest by size or beauty of form.

The marine fauna is indeed as rich as the land fauna is poor, and the low coral islands of the central Pacific swarm with fishes which have always been the principal food of the inhabitants. These fishes are closely connected with East Indian forms. The great mammals of this ocean are far more important than those of the land and deserve far more notice than can be given in this sketch.

Whales and the Whaling Industry.—I place the whales and their pursuit together, for no other animals have caused such changes to the primitive inhabitants and no study of the ethnology of the Pacific can omit or fail to give its proper prominence to the whalers and their intercourse with the islanders of this ocean. The days are gone when fifty or more American whalers wintered or refitted in the harbors of the Hawaiian Group, but the effects of this intercourse will only cease when the weaker race has wholly succumbed to the advance of the white race. It is pleasanter to look for a moment at the whales than to consider the acts of their hunters. The polar whale (*Balæna mysticetus*) comes only into the most northern part of our region, but another species (*B. japonica*) is found from continent to continent nearly as far south as the Tropic of Cancer. Still another species is common south of Australia, around the South American continent, and to some extent between these points (*B. antipodum*).

The Sperm whale (*Physeter macrocephalus*) is found between Australia and New Zealand, in Micronesia and around certain groups as the Hawaiian, Marquesas, Fiji and Society Islands. It is much more tropical than the Balænas, and while the latter prefer the cold polar waters and seldom go beyond the cooler currents of the Pacific, the cachelot is found especially in the tropical region and serves to employ the arctic whalers during the off season in the northern seas. Besides these "nobility" of the whale kind there are lesser lights hunted in the Pacific as in the Atlantic. The humpback (*Megaptera boops*) is found all along the American coast, at many of the central island groups in the tropics, and off the shores of New Zealand, New Caledonia and Australia. The Sulphurbottom (*Sibbaldia sulphureus*), Graywhale (*Rhachianectes glaucus*), Pacific finback (*Balænoptera velifera*) and Rorqual (*B. davidsoni*) are found off Japan, in Bering Sea and off the American coast.

The pursuit of these great mammals employed many men and much capital as is well known. When in full force in 1846 there were 735 American vessels with an aggregate tonnage of 233,133 tons. It may perhaps be forgotten that a whale ship, from the length and hardship of the voyage was regarded as a sort of reform school for rather hardened young offenders who were not amenable to the good influences on land. Hence it happened that many of these quasi convicts escaped to the island Edens and played the part of the serpent. But with these important exceptions I believe the influence of the whaling industry was not one of preponderant evil. Many natives went as sailors on these ships and learned to work as they would never have learned in the *dolce far niente* of their homes, and it was often the advice of these travelled countrymen that opened the door to the white missionary. It is impossible to believe that the influence of the sturdy men who sailed from New Bedford and Nantucket was very bad. Have we not known them in their homes and shaken hands with their worthy descendants? Of the literature on this subject may be mentioned, F. D. Bennett, *Whaling Voyage Round the Globe, 1833–36;* Beale, *The Sperm Whale and its Captors, 1839; United States Fish Commission Report, 1875;* Scammon, *Mammalia of Northwestern America, 1884.*

Inhabitants and Their Origin.—In no part of the primitive world has there been more confusion of races, more difficulty in exact classification, and, it must be added, more ignorance of people than in the Pacific. We have prehistoric remains in Easter Island, in Tongatabu, in Ponapé and in the Marianas of which Ethnologists know no certain origin. The great leaders of Ethnology have measured a few skulls (too often labelled "South Seas") and have compared imperfect vocabularies, and then, with some hesitation it is true, have made family arrangements in which they do not agree among themselves, and which farther knowledge may modify or replace. But this is not the place to enter into a discussion of the different systems, nor to follow that fascinating—because so difficult—quest for the origin of the peoples we now find on the islands of the Pacific. All admit they are not autocthonous, but theories of their origin start both from the East and from the West. One claims that the Polynesians, to take one of the more evident divisions of the islanders, came from the great Malayan islands and worked eastward; another contends that they had their origin in South or Central America and were dispersed through the great ocean by the Trades; while another, admitting their Asiatic birth, claims that they not only crossed the Pacific and peopled it, but continued their planting to the American continent. Let the theories await more complete knowledge: in the meantime all theorists in this domain are helping towards a final solution.

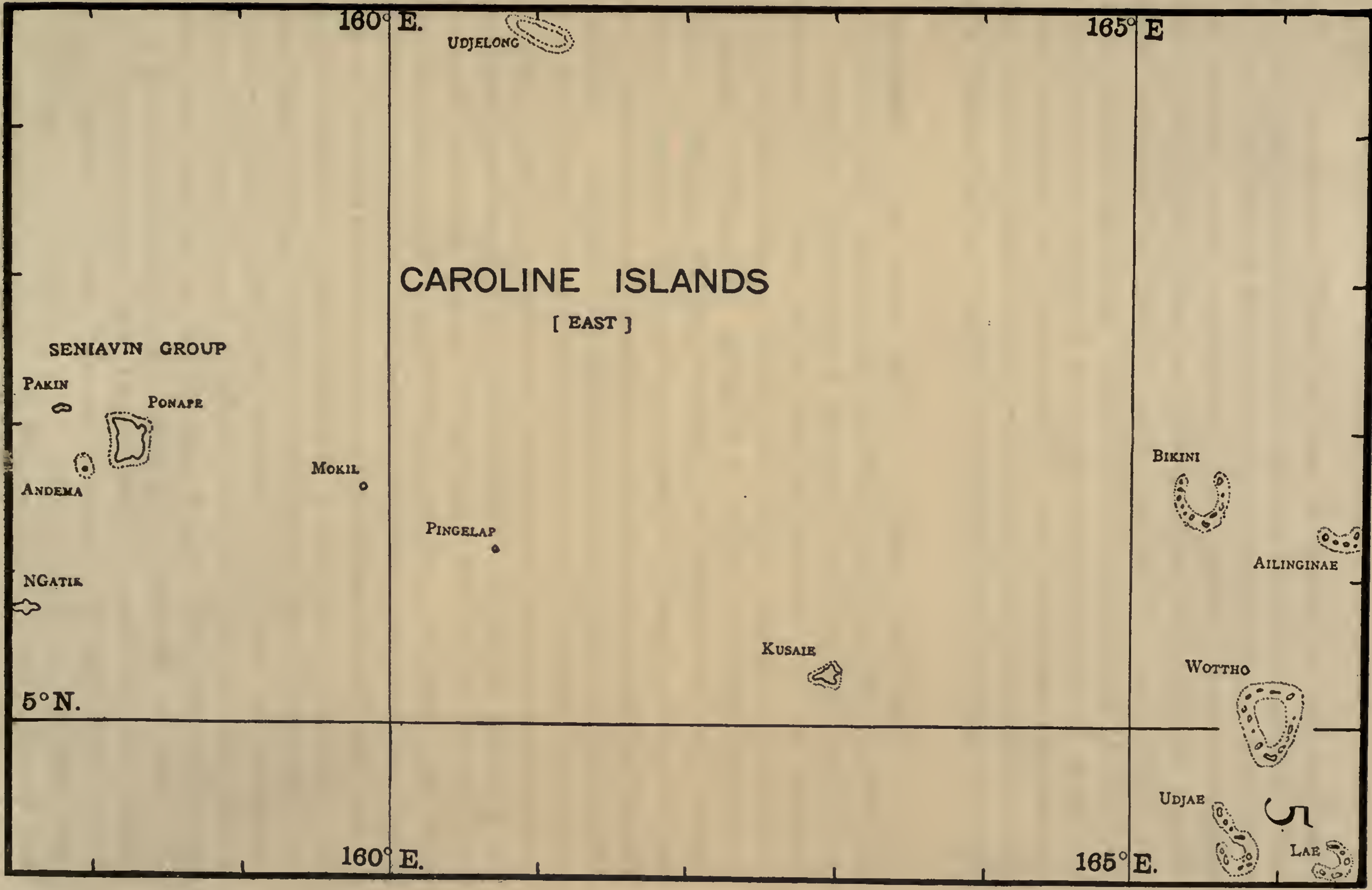
We may, to save repetition in the list of island names of which this is an extended introduction, adopt the most common and perhaps most correct classification into three main divisions without going beyond our region for relationships. These are Papuan, Micronesian and Polynesian. With the first we place Australians and the people of New Guinea, Pelew Islands, Bismarck Archipelago, Solomon Islands, New Hebrides, New Caledonia, Loyalty Islands and Fiji. The Australians are strongly differentiated from the others in mental if not in physical traits, and the Vitians are strongly tinctured with Polynesian blood, but on the whole the islanders mentioned agree in the following important matters; flat and abundant hair on both head and body; skin dark—almost black in Australia, Solomon Islands and New Caledonia, chocolate-colored in New Guinea, yellowish (from Malay admixture) in the Pelew Islands; scar or paint the body, but do not tatu; do not circumcise except in Australia, Fiji and some islands of the New Hebrides; heads dolichocephalic, prognathous and phanerozygomatic; nose broad and hooked; lips intumescent but not so full as in the negro; height medium; chew betel rather than awa; have artistic feeling in decoration (especially in New Guinea and the Bismarck Archipelago); cook in earthen vessels; are cannibals (except Australians and the Pelew Islanders); are noisy and restless, decidedly democratic, have no kings nor hereditary chiefs; show no sentiment in favor of clothes; are irreligious and exhibit great diversity of dialects.

The Micronesian division includes the Marianas, Caroline, Marshall and Gilbert groups. It is a debatable ground between the first and last divisions. The people are a plainly mixed race of Papuan and Polynesian ancestry with considerable Malay admixture at the western end. They are less democratic than the Papuans, more so than the Polynesians; use looms (as do also the New Hebrideans); are good navigators; tatu to some extent (Carolines); considerable diversity of dialects with many Polynesian roots.

In the Polynesian Group are the Hawaiians, Samoans, Tahitians, Marquesans, Tongans, Paumotuans and Maoris. They have long, black, cylindrical hair, little of it on body, hence addicted to tatuing in which they excel; brachycephalic, and not very prognathous; fairly large stature; light-colored; very large dark eyes; practise circumcision; are not cannibals (except Marquesans and Maoris); caste institutions with kings and chiefs; are very religious; kapu system in full force; use awa, never betel; no looms, no earthen vessels; cook in earth ovens and with hot stones; make kapa or bark cloth (as do also the Solomon Islanders and some tribes of New Guinea); have a strong sentiment of dress; have a common language from Hawaii to New Zealand; are good seamen and fishermen. In ancient times were good navigators journeying in their canoes to almost incredible distances as seen in the ancient voyages of the Hawaiians to Tahiti.

In every generalization there must be many exceptions, but the characters here given are very general. The hybrids are very numerous and most difficult to place when met casually. The Papuan + Polynesian hybrid is much more homogeneous, that is, more difficult to pick out traits of either parent, than is the mixture of Chinese + Polynesian, where the Mongolian predominates but the Polynesian is still in evidence. Otherwise half-breeds in the Pacific are much as half-breeds are everywhere else.

Cannibalism.—This custom which arouses a curious horror in most civilized people, although man is a carnivorous animal and human flesh is not unwholesome, was once prevalent in the Marquesas, Fiji and New Zealand, and is now in full force in the Solomon Islands, New Hebrides, Bismarck archipelago and parts of New Guinea. Elsewhere in the Pacific it has never existed or has yielded to the pressure of civilization. The origin of this curious habit has been ascribed to various causes, as for instance, piety—the nearest relative devouring the remains of a dear corpse to place them nearest the seat of the affections and to protect them from outrage by the enemy. Such disposal has occurred on groups not otherwise anthropophagic. To absorb the qualities of another is, I believe, the most orthodox application of cannibalism. Brave and tried warriors were eaten, never women or children, and the true cannibal never allowed a woman to eat a man! Certainly the portions in which the desired qualities were supposed to reside were most sought, the hand, the heart, the testes. This effect of food is, perhaps unconsciously, recognized in the navy of a great nation where mutton is never eaten lest the marines become sheepish. It is worthy of note that the worst cannibals in the Pacific were also the most skilled producers. Maori and Marquesan carvings, Solomon Island canoes, New Hebridean mats are all in evidence. Revenge; that sweet passion in the savage thought,—to cook an enemy like a dog or pig, to drink his blood, is world-wide in desire if not in full execution, and Kali the bloodthirsty wife of Shiva in the Hindu pantheon is not the only primitive deity in which this passion is personified. Needed food: man, although carnivorous, did not suffer from famine on the Pacific Islands, at least on those where anthropophagy prevailed, but it has been suggested that in the long voyages food may have failed as it


CAROLINE ISLANDS
[EAST]
160° E.
165° E
160° E.
165° E.
5° N.
UDJELONG
SENIAVIN GROUP
PAKIN
PONAPE
ANDEMA
MOKIL
PINGELAP
NGATIK
KUSAIE
BIKINI
AILINGINAE
WOTTHO
UDJAE
LAE
5

1085

has too often in the voyages of civilized men, and the weakest has been sacrificed to save life. The strong persistence of the habit once acquired is fully recognized. This might explain the prevalence of the custom among Maoris and Marquesans at opposite ends of the Polynesian domain. Cakobau used to boast that he had eaten one hundred and seventy-five of his fellow Vitians, and a New Hebridean belt in the Bishop Museum is hung with one hundred and thirty-five incisors, the tally of so many victims of its chiefly owner; but the commoner got little of this rich food, and now it has come that under British rule the last vestiges of this custom have been wiped out in the two South Pacific strongholds, New Zealand and Fiji. Even the trophies of cannibalism, arm and leg bones inserted in the stem of a growing tree, are more common in museums than in the Fijian archipelago. Evidently in the Pacific it will soon be only a matter of history.

Languages.—While among the Polynesian islanders there is an unmistakable relationship of language, in the Melanesian the confusion of Babel *seems* to rule supreme. On not a few small islands of Micronesia several mutually unintelligible tongues are found, and it would require much imagination to trace any connection. The languages of New Guinea are so little known that no comparisons can be drawn between them and the Melanesian, nor can it be stated with authority whether the Malay element is more preponderant there than in the tongues farther east. Codrington (in the work mentioned below) seems to regard the Melanesian as superior to the Polynesian. The languages of Australia offer other differences and still less relationship to the Malay. Even where certain common words are selected and compared in the forty or fifty dialects of which vocabularies are accessible, the result is by no means satisfactory, and to classify one must have recourse not to roots but to grammatical structure, of which not enough is at present known to warrant any definite scheme. To enter into the peculiarities of even the best known would require not only much space but a knowledge beyond the reach of the present writer, and the subject will be left with a few examples of the languages of the Pacific as they have been printed. Those who are curious to know more may consult the works of which a list is appended. The similarity between the Polynesian dialects is so great that a native of one group finds little difficulty in making himself understood in any other. Codrington, R. H., *The Melanesian Languages*, Oxford, 1885; Gabelentz, H. C. von dc, *die Melanesischen Sprachen*, 2 vols., Leipzig, 1860–73; Humboldt, Wm. von, *Ueber die Kawi Sprache auf der Insel Java*, 3 vols., Berlin, 1836–38; Hale, Horatio, *Ethnography and Philology of the U. S. Ex. Ex.*, Philadelphia, 1846; Inglis, J., *Grammar and Dictionary of the Aneityumese Language*, London, 1882; Grézel, Pére, *Dictionnaire Futunien-Français*, Paris(?), n. d.; Tregear, E., *Maori-Polynesian Comparative Dictionary*, Wellington, N. Z., 1891; Andrews, L. A., *Dictionary of the Hawaiian Language*, Honolulu, 1865; Pratt, G., *Grammar and Dictionary of the Samoan Language*, 2d ed., London, 1891;

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The illustrative sentence I have chosen is the invocation of the Lord's prayer, "Our Father which art in heaven, Hallowed be thy name."—*Matthew* vi, 9.

Hawaiian—E ko makou Makua iloko o ka lani, i hoanoia kou inoa.
Maori—E to matou Matua i te rangi, kia tapu tou ingoa.
Tahitian—E to matou Metua i te ao ra, ia raa to oe i'oa.
Tongan—Ko e mau Tamai oku i he lagi, ke tabuha ho huafa.
Rarotongan—E to matou Metua i te ao ra, Kia tapu toou ingoa.
Samoan—Lo matou Tamā e o i le lagi, ia paia lou suafa.
Rapanui—To matou Matua noho rangi e, ka tapu to koe ingoa.

Fiji—Tama i keimami mai lomalagi Me vakarokorokotaki na yacamu.
Aneiteum—Ak Etamama an nohatag, Etmu itaup nidam.
Erromanga—Itemen e kam ūnpokop, eti tumpora nin enugkĭk.
Uea—Kamömun ethö nyi drany, E so e kap iâm.
Maré—Cecewangoiehnij'ile ri awe ke! Hmijocengo ko re acekiwangoieni buango.
Lifu—Tetetro i anganyihunieti e kohoti hnengödrai, jiniati e hmitöte la atesiwa i enëtilai.
Motu—Ai Tamamai guba ai noho, oi ladamu baine ahelagaia.
Gilbert Islands—Tamara are i karawa, E na tabuaki aram.
Mortlock—Ie ojon ami au pue iotok: Jam at me nono lan.
Rotuma—Ko otomis Oifa tae e lagi, La re titiaki se ou asa.
Kusaie—Papa tumus su in kosao, E'los oal payi.
Ebon—Jememuij i lõñ, En kwojarjar Etõm.
Ponapé—Jam at me kotikot naloh, mwar omwi en kakanaki er. (Old version.)
Ponapé—Jam at me kotikot nalan, Muar omui en Jaraui ta. (New version.)

Religion.—As has already been said the Polynesians were a religious people and their theogony was much the same on all the groups. The attributes of the gods differed widely, and the forms of worship as well. On the Hawaiian Group Maui, Kane and Lono were the great trinity while their subordinates were reckoned by the 40,000 and the 400,000. Images were in demand and an odd beach-worn pebble would serve where the more elaborate carvings could not easily be obtained. Every guild had its deity, and the man often had a god distinct from that of his wife. In New Zealand divine images were rare and a very few of inferior workmanship have come to us. It is remarkable that when the Maoris excelled in wood-carving their skill was expended on other than divine images. So it was to even a greater extent with the Fijians and Samoans. Of the Society Islands idols of most complicated form and good workmanship are to be seen in the British Museum, but nowhere else. In Tonga images and bundles of sticks alike served to fix the wandering prayers of the people. Human sacrifices were most common on the Hawaiian Islands where cannibalism did not exist, least common among the anthropophagous Vitians.

In the western Pacific the objects of worship were generally departed spirits, and a refined form of this ancestor worship is seen in the curious custom of *Korowars* in New Guinea which recalls the image always provided for the *ka* of the ancient Egyptian. The idols of the Marquesan at one end of the Pacific and of the New Hebridean at the other were elaborately cut from wood or stone. The temples of eastern Polynesia were built of stone in substantial manner, while in the west the Melanesian erected ephemeral structures of cane or palm leaves, and the Fijian built with sinnet the hardly more durable "Devil Houses" of his cult. Had not the Hawaiian temples been destroyed by the hand of man they would have lasted for many centuries; this is also true of the morais of the Tahitians.

Throughout the Pacific there was an unseen world recognized by all. Good spirits and bad, white spirits and black were everywhere and were generally objects of dread and propitiation. Night was especially the time when the spirits drew near to human beings, and even when Christianity has replaced many of the ancient beliefs a Pacific islander does not like to travel alone in the dark.

Missions.—This is not the place to speak at length of the great work the devoted bands of missionaries have been doing for the last eighty years in the Pacific region. All sects, from the Buddhist and Mahometan on the west to the Protestant, Catholic and Mormon on the east have earnestly ploughed some portion of the field, and the harvest has in many cases been good. With the religious Polynesians the work was not so difficult, and in turn the Tongan, Samoan and Hawaiian converts became earnest and successful helpers in the missions to the other groups. In the Marquesas faithful Hawaiian missionaries have labored for many years, and so have they done in Micronesia. The Melanesian Mission has also made good use of native converts in reclaiming the heathen. The whalers made it possible for the missionaries to land on many islands, and the missionaries have in turn made it possible and pleasant for other civilized people to dwell where formerly paganism and cannibalism were supreme.

Kapu System.—The early voyagers found almost everywhere on the islands at which they touched a system of which the name has become a common English word. They recognized it as a method of prohibition against which they were constantly striking, but to the present day no one has fully treated of the wonderful political and religious engine by which the Polynesian first, the Melanesian in imitation controlled the wishes and acts of the common people. It was a mighty power in the hands of the ruler, whether priest or chief, and it might be exemplified in the strip of white kapa that, bound around a coconut tree, preserved the fruit from all marauders; or the tuft of the same fragile material at the end of a slender wand which placed in the path would turn an army aside into the jungle. It might be temporary, as the order of silence which at stated times fell on all the land and not even a dog might bark or a cock crow while the kapu lasted, or it might be the lasting prohibition which denied to woman certain choice articles of food which man was free to eat.

The origin of kapu is unknown but it must have been remote, so elaborate had the system become. It had grown until it became so complicated that the understanding of the common people could not compass it, and even to the chiefs its restrictions grew unbearable until in the Hawaiian Islands, where it reached its most perfect development, a great uprising swept it away and left a clear field for the introduction of Christianity.

My knowledge is not sufficient to permit me to decide which was the greatest achievement of the Polynesian mind, the Kapu or the system of water rights. Both are admirable and should sometime receive the attention they deserve in the thought of scholars. For information on these subjects consult: *Grey's Polynesian Mythology*, London, 1855; Codrington, R. H., *The Melanesians; Studies in their Anthropology and Folk-lore*, Oxford, 1891; Gill, W., *Myths and Songs of the South Pacific*, London, 1876; Stair, J. B., *Old Samoa*, London, 1897; Ellis, W., *Polynesian Researches*, London, 1830, 2 vols.; Bastian, A., *Zur Kenntniss Hawaii's*, Berlin, 1883; Fornander, A., *The Polynesian Race*, 3 vols., London, 1878–85; Remy, J., *Récits d'un vieux sauvage pour servir à l'histoire ancienne de Havaii*, Chalons-sur-Marne, 1859.

The Partition of the Pacific.—Unlike the partition of the African continent, the appropriation of the islands of the Pacific has led to no important wars or diplomatic difficulties, and the division is now nearly complete. Foreign nations have not quarrelled over the spoil and the natives have generally acquiesced in a change of sovereignty which they could not well prevent. In New Zealand the Maoris made a fierce resistance to the invaders, but this did not last long. France found some fighting before she could control all the south-eastern portion of the Pacific, and Spain found some energetic protests to her work in the Marianas. Elsewhere it was "Good God, good devil" to the natives so long as they had their accustomed food and were not compelled to work.

Among the powers there was slight friction at times. The Hawaiian Islands were seized by England (Lord George Paulet) but relinquished, threatened by France (La Place) and Japan until the United States put an end to all claims by annexation. In Micronesia Germany's claim to a part of the Carolines was adjudicated by the Pope, and now Spain has sold all of that extensive archipelago as well as the part claimed, and thrown in the remnant of the Marianas to boot to Germany. The tripartite attempt to govern Samoa threatened to make trouble, but this was happily averted by the withdrawal of Great Britain and the amicable division of the group by Germany and the United States. When by the fortune of war the United States acquired Guam and the Philippines, Spain ceased to be an important owner of Pacific territory, and England, the United States, Germany, France and Japan control the entire region.

When the question of a trans-Pacific telegraphic cable arose there was active annexation by Great Britain of all islands, islets or rocks that happened to be in any of the tracks proposed, and Japan seized Marcus Island in imitation of more important powers. In the hurry some islands were taken that had already been appropriated by another government, but the real value of these bits of sand and rock is not sufficient to make trouble in these days of wiser arbitration.

The colonization of these islands, some of them without inhabitants, others with a dying population, but many of them most attractive in scenery and climate, has not yet progressed far except on the Hawaiian Islands, New Zealand and Australia. Germany has an elaborate official organization in her colonial islands, but officials alone will not bring prosperity to a colony. France has some choice islands, but for some reason immigrants do not increase there. Will the United States be as successful as England in her new colonial experience?

In Conclusion.—A few words of more formal introduction may lead the reader to the geographical material to which this long chapter is the preface. The maps have been constructed from the best government charts, although they are copies of no one chart; neither are they, like the composite photograph, a combination of many. Selection has been made, but no serious attempt has been made to produce a finished chart; it would be useless in the present state of our knowledge of the Pacific islands, and it would not greatly surprise the author should the exact surveys that must be made in the near future, expose great inaccuracies, nay, even render the present maps quite unrecognizable as delineations of the same island or group. But they will have served their modest purpose: the Primer must come before the Reader, and if they will in any way clear the path of the future geographer of the Pacific by giving ground for just criticism, they will not have been offered in vain.

The needs of the administration of a museum like this that bears the honored name of Mrs. Bishop, have compelled much reading of voyages and descriptive accounts of the Pacific region, and notes have been made for years and arranged alphabetically on uniform slips, which now number nearly 4000, and the convenience for reference has been so great that these notes have been made the basis of the list of islands here given.

I am sorry that I am not so familiar with many of the dialects of the Pacific as to be always sure of the orthography, or even of the meaning of names, but I have consulted the best authorities within my reach. In some cases I may seem to have wilfully left the right and chosen the wrong, as in the case of the name *Paumotu* which I have retained as the best known throughout this region, although the form *Tuamotu* adopted by the French may be more correct. The first word of the compound is usually dropped among traders and navigators in the south Pacific and Motu alone used.

As to the heights given I have met with difficulty. Findlay's Directory may state the height of an island as 3000 feet, a later chart will put it at 2100, while a still later Hydrographic report will call it 1200, not one of these important publications giving the authority. An ordinary estimate should not vary so much, and I was inclined to omit all heights as well as population, but finally have given them as merely approximate and the reader can attach his own value.

To supplement the meagre information given in the Index authorities have been sometimes appended to the text, and the following list will assist some perhaps to follow more closely the information attainable. It does not of course pretend to be even a partial Bibliography, but simply a list of some of the more important works used in the compilation of this Index.

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LIST OF MAPS.

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2. Hawaiian Islands (Western).
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7. Gilbert Islands.
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9. Louisiade Archipelago.
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11. Solomon Islands.
12. New Hebrides.
13. New Caledonia and Loyalty.
14. Fiji.
15. Samoan Islands and Niüe.
16. Ellice Group.
17. Phœnix and Union Islands.
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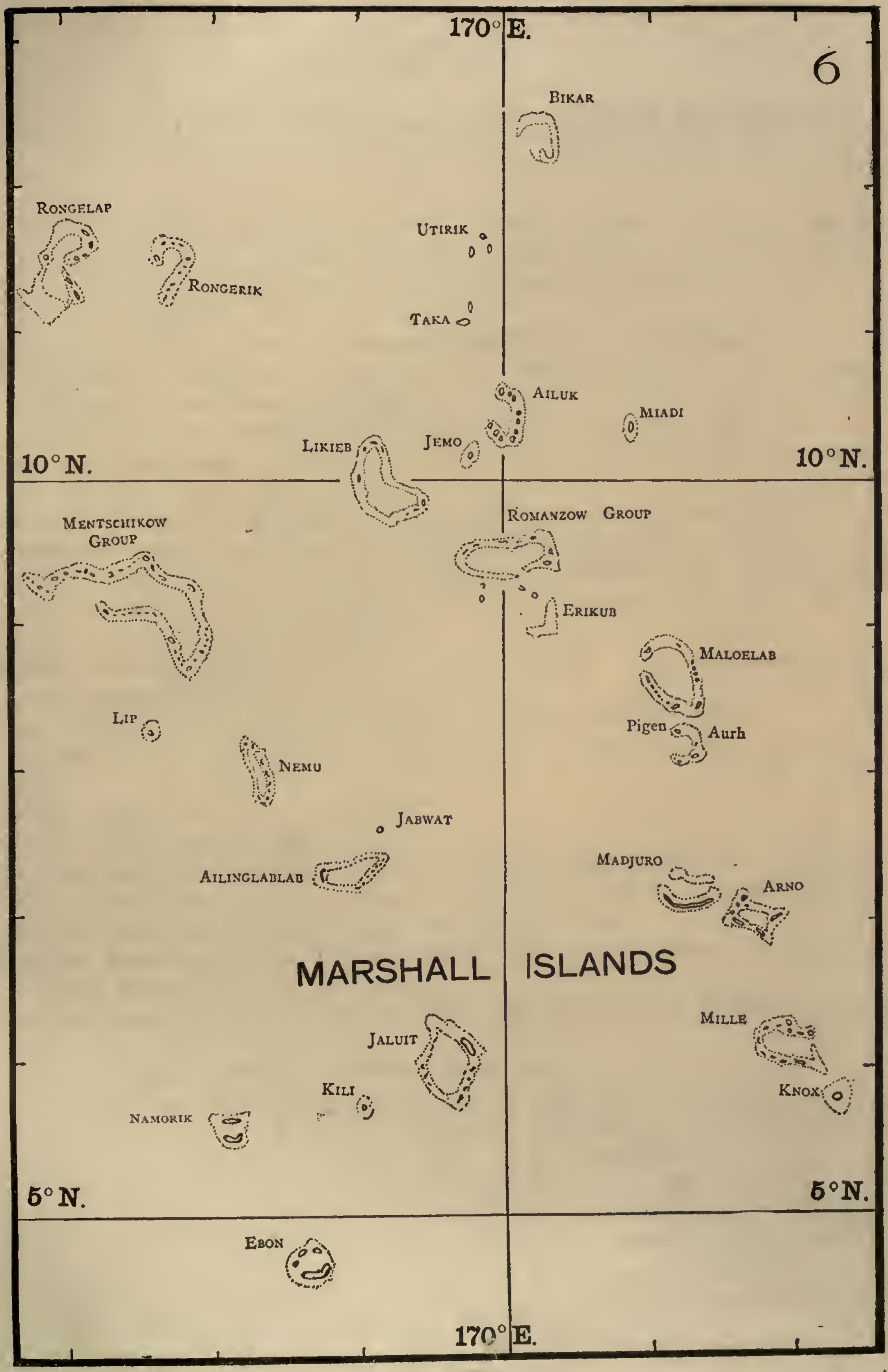
ILLUSTRATIONS IN TEXT.

Butaritari.
Fanning.
Malekula.
Marianas.
Matuku.
New Zealand.
Palmyra.
Peru.
Rapanui.
Washington.


6
170° E.
Bikar
Rongelap
Rongerik
Utirik
Taka
Ailuk
Miadi
Likieb
Jemo
10° N.
10° N.
Romanzow Group
Mentschikow Group
Erikub
Maloelab
Pigen
Aurh
Lip
Nemu
Jabwat
Ailinglablab
Madjuro
Arno
MARSHALL ISLANDS
Mille
Jaluit
Kili
Namorik
Knox
5° N.
5° N.
Ebon
170° E.

AN INDEX TO THE NAMES OF THE ISLANDS OF OCEANIA.

Aasu, or Paris, on the north coast of New Guinea, 3° 22′ S., 143° 25′ E. Thickly wooded and inhabited. On the same reef is the islet Unei.

Aatao, one of the many names given to Angatau, Paumotu islands. **21.***

Ababa, see Torres islands. Also called Baba.

Aba evara, the western islet of the Basses group, Louisiade archipelago.

Abaga gaheia, or Abagaheia, eastward of Pana trusima (Earle) in the Louisiade archipelago. 1.7 m. long, 585 ft. high.

Abau, in Cloudy bay on the south coast of New Guinea. 10° 13′ S., 148° 42′ E.

Abaura, or Midge islands, three low and wooded islets near Fly river, south coast of New Guinea. 8° 29′ S., 143° 39′ E.

Abavi, in Cloudy bay on the south coast of New Guinea. 10° 15′ S., 148° 44′ E.

Abgarris, also called Faed islands, in the Bismarck archipelago. A chain of low islands, of which Goodman is the southernmost, extending 30 m. NW-SE. North point 3° 09′ S., 154° 22′ E. Discovered by Captain Renneck of the *Lyra*. **10.**

Abian, a form of Apaiang, Gilbert islands.

Abingdon, of the Galapagos. 0° 34′ 25″ N. 1950 ft. high. Resort of the Buccaneers.

Abo, on the coast of New Guinea. 8° 22′ S., 143° 07′ E.

Abuda, within Angasa reef of the Fiji group. 18° 56′ S., 181° 26′ 30″ E.

Abutolema, without Angasa reef of the Fiji group. 18° 53′ 30″ S., 181° 24′ E. 60 ft. high.

Abutuena, Angasa reef of the Fiji group.

Achir = Uea of the Loyalty group. **13.**

Actæon, or Amphitrite islands in the Paumotu group were discovered in 1833 by T. Ebrill in the Tahitian trader *Amphitrite*. The names are much mixed on charts. Maturei vavao, Tenarunga, Vehanga and Tenararo. **22.**

Adabadana Kawa, of the Talbot group on the coast of New Guinea, between Kawa and Mata Kawa. 9° 17′ S., 142° 11′ E.

Adams, southernmost of the Auckland islands, belonging to New Zealand. 2000 ft. high.

Adams (Ingraham), see Huapu of the Marquesas. **23.**

Adams (Roberts), see Nukuhiva of the Marquesas. **23.**

Adèle, easternmost of the Louisiade archipelago, only 500–600 yards in diameter. 11° 29′ 50″ S., 154° 26′ 10″ E. Discovered by Captain Coutance.

Adi, on the coast of New Guinea. 4° 05′ S., 133° 30′ 30″ E.

Admiralty Islands were discovered by Schouten and Lemaire in July, 1616. The group consists of one large and many small islands. Carteret visited it in 1767. Admiralty, the largest, was described by D'Entrecasteaux in 1792. It is 50 m.

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*Names considered more correct are printed in heavier-faced type. The number at the end of the paragraph indicates the map on which the island will be found.

E-W.×15 m. N-S. 3000 ft. high. *Challenger* visited the group and named after the officers nearly every bay, point or rock. Jesus Maria, La Vandola, Elisabeth, Sugar-loaf, Western, Wild, Suhm, and many mere rocks compose this interesting group now included in the Bismarck archipelago. The inhabitants are not very dark, often dye their black hair red; wear little clothing—the men, as their sole garment, a white cowry shell; use splints of obsidian for knives and spear points; carve fine circular bowls often of great size; principal food, sago. Centre of principal island about 2° 10′ S., 147° 00′ E. **10.**

Admiralty Islets, a small group a mile and a half from north end of Lord Howe island.

Adventure, see Motutunga of the Paumotu islands. **21.**

Adventurer Islands are two islands about half a mile in extent, low, wooded, and connected by a reef. Reported in 1877 by Mr. Ebury, master of the *Adventurer.* Existence is doubted.

Agaga*= Anganga of the Fiji group.

Agakanitai, an islet of Mangareva.

Agata, south of Yasawa towards Naviti, Fiji. Is it confounded with Agate?

Agate, in the Yasawa group, Fiji, near Naviti. Small, rocky, high. 17° 11′ 30″ S., 177° 08′ 10″ E. Named for one of the artists of the United States Exploring Expedition. **14.**

Agomes = Hermit islands in the Bismarck archipelago. **10.**

Agrigan, of the Marianas. A volcanic island 6 m. long by 2 m. broad, and 2000 ft. high. 18° 48′ N., 145° 40′ E. In 1810 Captain Brown and other Americans with several families of Hawaiians formed a colony on this island, but it was broken up by the Spaniards who destroyed the plantations and carried off the Hawaiians to slavery and they were never again heard from. See Chamisso in Kotzebue's voyage. For map of the group see Marianas.

Agnarí, see Santa Catalina, Solomon islands. **11.**

Agué, islet of the Harcourt group on the northeast coast of New Caledonia.

Aguijan, of the Marianas, was discovered by Magelhâes March 6, 1521, in 14° 51′ N., 145° 30′ E. It is 3 m. long by 2 m. wide and uninhabited.

Ahangatou = Angatou of the Paumotu group. **21.**

Ahii, or Peacock, is low, coral, inhabited, and about 13 m. long. The east end is 14° 27′ 20″ S., 146° 13′ 24″ E. **20.**

Ahunui, also called Fangataufa and Cockburn, of the Paumotu group, was discovered by Captain Beechey in 1826 and named after the Comptroller of the Navy. It is a closed lagoon island nearly 4 m. in diameter and the southwest end is in 22° 17′ S., 138° 39′ 53″ W.

Aidoumea, or Aidoema, on the south coast of New Guinea. 3° 58′ S., 134° 00′ E. Called formerly Isla del Capitano Luis Vaes de Torres from its discoverer.

Ailinginæ, or Remski-Korsakoff of the Marshall islands is 12 m. southwest from Rongerik. It is 15 m. E-W. and 4 m. N-S.; uninhabited. It was discovered by Kotzebue, and the southwest point is 11° 08′ N., 166° 20′ E.

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*Although this is the correct form it has seemed best in giving the Vitian names to adopt the phonetic spelling: g is pronounced ng, c is th, and b is mb. Thus Cakobau is pronounced Thakombau: Baga, Mbanga, etc.

Ailingjappel, islet of Mentschikow or Kwadjelin in the Marshall islands.

Ailinglablab, of the Marshall islands, was discovered by Captain Bond in December, 1792. It is 36 m. long and composed of many islets on the ring encircling in a very irregular way a lagoon. The northwest end is 8° 11′ N., 167° 58′ E.

Ailuk, also Tindal, Watts or Krusenstern of the Marshall islands, was discovered by Captain Marshall in 1788, and is 20 m. long and 5-8 m. wide. 10° 30′ N., 170° 04′ E.

Ain, wooded islet of Mengalia reef on the northeast coast of New Caledonia.

Ainioro, one of the Amazon islands on the south coast of New Guinea. 10° 21′ S., 149° 17′ E.

Aiona, islet of Murua or Woodlark in the Trobriand group. 9° 13′ S., 152° 49′ E.

Aiou = Yowl, west from the New Guinea coast.

Aiperé, a name sometimes given to Tanna of the New Hebrides.

Airik, islet of Maloelab in the Marshall islands. 8° 31′ N., 171° 10′ 30″ E.

Aitutaki, of the Hervey group, was discovered April 11, 1789, by Captain Bligh of the *Bounty* a few days before the mutiny broke out. It is high and 18 m. in circumference, with a reef on the southwest coast. Population about 1500. The finest tatuing I have ever seen was on two Aitutakian sailors. 18° 54′ S., 159° 41′ W. **23.**

Aiva, is a double islet, Aiva-va and Aiva-thaki, between Lakemba and Oneata of the Fiji group; low, not exceeding 30 ft.; uninhabited; 9 m. × 3.5 m. 18° 21′ S., 181° 17′ E. **14.**

Aivei, islet on the coast of New Guinea. 7° 50′ S., 145° 10′ E.

Aivo, or Renny, is on the east side of Malaita, Solomon islands, low and wooded; less than a mile NW-SE. 8° 58′ S.

Akahaina, or Fakaina, or Predpriatie, of the Paumotu group was discovered by Kotzebue in 1824. It is low, inhabited, about 4 m. long. The centre is in 15° 58′ S., 140° 11′ 30″ W. **21.**

Akamaru, or Wainwright, is an islet of Mangareva of the Paumotu group. **22.**

Akamokum, islet of Peleliu of the Pelew or Palao islands.

Akani, a group of islets in the Bismarck archipelago. 3° 20′ S., 154° 36′ E.

Akiaki, or Thrum Cap of the Paumotu group was discovered by Bougainville in 1768 and by him called Les Lanciers; inhabited, though a low coral bank less than a mile in diameter. 19° 17′ 40″ S., 138° 42′ W.⊙ **22.**

Akoo, islet of Ontong Java, Solomon islands. 5° 37′ S., 159° 34′ E. **11.**

Alapawa, in Cook strait, New Zealand. 41° 12′ S., 174° 20′ E.

Alau, islet off the east coast of Maui, Hawaiian group. 20° 43′ 50″ N., 155° 58′ W.

Albany, on the coast of Australia. 10° 43′ S., 142° 36′ E.

Albatross, islet at the mouth of Saluafata harbor on Upolu, Samoan group, 9 m. east of Apia.

Albemarle, of the Galapagos, 60 × 15 m., 4000 ft. high; six volcanoes; largest of the group.

Alcester, a group of three islands of the Trobriand group extending about 3 m. ENE-WSW. The natives are most skilful canoe builders. 9° 29′ S., 152° 30′ 45″ E.

Alcmené, an islet 3 m. southeast from Isle of Pines, Loyalty group. 22° 40′ S., 167° 29′ E.

Alden, of the Hudson group, Fiji. High and rocky. 17° 37′ 20″ S., 177° 00′ E.

Alefa, of the Tongan group is in 20° 00′ S., 174° 30′ W.

Aleford, group of four small and reefed islets at the head of Milne bay at the southeast end of New Guinea. 10° 22′ S., 150° 20′ E.

Alele, coastal islet of New Guinea. 7° 52′ S., 145° 13′ E.

Alet, islet of Enderby, Caroline islands. At the east of the fringing reef which extends 5.5 m. E-W. and 3 m. N-S. is Pozoat. 17° 19′ 25″ N., 149° 15′ E.

Alewa kalou, Awakalo or Round, an uninhabited rocky islet of Fiji, 500± ft. high. 16° 40′ S., 177° 46′ E.

Algrail, islet of Wolea, Caroline islands.

Alita, southernmost of the Trois Sœurs, Solomon islands. **11.**

Allen, one of the Wellesley group in the Gulf of Carpentaria.

Allison, is between L'Echiquier and Durour in the Bismarck archipelago. Discovered by Captain Allison in 1885. 2–3 m. NW-SE., 100–150 ft. high, covered with trees. 1° 25′ S., 143° 26′ E.

Allufatti = Alofa, Horne islands.

Almagan, an active volcano of the Marianas. It is 2.2 m. N-S. by 1.5 E-W., and 2316 ft. high. 17° 36′ N., 145° 50′ E. See map under Marianas.

Alofa, one of the Horne islands southeast from Fotuna. It is 6 m. E-W. by 3 m., and 1200 ft. high; volcanic. 10° 16′ S., 178° 00′ W. **18.**

Alu, a wooded coral island 150 ft. high at the east end of Shortland island, Solomon islands. It is well cultivated, and surrounded, except on the northwest side, with a fringing reef. 7° 08′ S., 155° 50′ E. **11.**

Amanu, or Möller, of the Paumotu group was discovered by Captain Bellingshausen in 1829. It is 18 m. NE-SW. and 8 m. wide. Inhabited and abounds in pearl oysters. The northeast point is 17° 43′ S., 140° 39′ W.

Amat, Isla d'. In 1774 Spanish priests gave this name to Tahiti.

Amazon Islands, two small islands in Amazon bay on the south coast of New Guinea. They are called Ainioro and Laraoro. When, some years ago, natives attacked H. M. S. *Bramble* a canoe filled with female warriors accompanied the party, hence the name of both bay and islands.

Ambatiki, of the Fiji group, is nearly an equilateral triangle of 2 m. on a side and surrounded by a reef. It is 750 ft. high, and inhabited. 17° 47′ S., 179° 10′ 30″ E. **14.**

Ambau, see Mbau of the Fiji group. **14.**

Ambrym, of the New Hebrides, was discovered by Cook in 1773. It is volcanic, Mt. Marum having had an eruption in 1888, and is 22 m. E-W. and 17 m. N-S.; about 3000 ft. high; population dense. 16° 10′ S., 168° 05′ E. **12.**

Amédée, islet of New Caledonia, is 10 m. off Noumea in 22° 28′ 44″ S., 166° 28′ 40″ E. On it is a fine lighthouse 174 ft. high.

Ameré, islet on the southeast reef of New Caledonia.

Amesse, islet of Namoluk of the Caroline islands. 5° 45′ 15″ N., 153° 16′ 30″ E. **4.**

Amicitia, an island perhaps identical with Oraluk of the Carolines. **4.**

Amota, one of the Hermit islands, in 1° 32′ S., 144° 55′ E. **8.**

Amphlett Islands are northeast of Moratau of the D'Entrecasteaux group, about 9° 20′ S., 150° 48′ E. There are eight or more small islands, wooded and of moderate height, forming a broken chain parallel to the coast. **9.**

Amsterdam, islet on the coast of New Guinea. 0° 20′ S., 132° 08′ E.

Amsterdam (New), a name given by Tasman, in 1643, to Tongatabu.

Amytideu, an islet of Namonuito of the Carolines. **4.**

Anaa, or Chain of the Paumotus, was discovered by Cook in 1769. The northwest point is in 17° 23′ S., 145° 38′ 30″ W. In 1874 there were 1500 inhabitants and 7,000,000 coconut trees. Inhabitants formerly war-like, good sailors, and cannibals; obtained control of many of the neighboring islands. **21.**

Anabadibadila, islet of the Dumoulin group on the southeast coast of New Guinea. It is 17 ft. high.

Anacoretas, called also Hermit, Monk's, Anchorite, were discovered by Bougainville, August 7, 1768. There are five or six islets covering a space 2.5 m. long. The inhabitants are said to resemble Chinese. 0° 50′ S., 145° 35′ E. **8.**

Anagusa, or Bentley of the Louisiade archipelago, in 10° 43′ S., 150° 43′ E., is 1.2 m. E-W. and half a mile broad; inhabited; 350 ft. high.

Anakarukarua, one of the Dumoulin group on the coast of New Guinea. 225 ft. high.

Anangai, see Wolea, Caroline islands.

Anataxan, or Anatajan, of the Marianas, is 5 m. E-W. and 1.5 N-S., about 1200 ft. high; volcanic. 16° 19′ N., 145° 35′ E. See map under Marianas.

Anatunga, islet on the north coast of Vanua levu, Fiji, north of the entrance to the Lekutu river.

Anchor, low, small, wooded on northeast of East cape of New Guinea.

Anchorage, or Pass at the mouth of the lagoon of Taka or Suvárov. 13° 13′ S., 163° 09′ 15″ W.

Anchorage, islet of Stewart island, New Zealand.

Anchorite, see Anacoretas.

Andatavie, marks the north limit of Ngaloa harbor, Fiji. It is 165 ft. high.

Andema, or Ant, of the Carolines, was discovered by Lütke and is about eight miles west of Ponapé. It consists of a dozen coral islets and is not permanently inhabited; belongs to a chief of Ponapé, and is resorted to for fish and turtle. The name has been explained to mean Ant over there. 6° 45′ N., 158° E. **5.**

Andiwathe, islet 250 ft. high, off the west coast of Vanua mbalavu, Fiji. **14.**

Andrew, near the centre of Hercules bay, low and wooded, on the northeast coast of New Guinea.

Androna, in the Yasawa group, Fiji, extends 3 m. by 1.2 and is 900 ft. high. The north point is in 16° 52′ S., 177° 24′ 30″ E. **14.**

Anegada, La. Quirós discovered January 26, 1606, an island which he called Luna puesta; Gaspar Gonzales de Leza called it La Anegada, and José Espinosa named it Encarnacion.

Aneiteum, was discovered by Cook in 1773 in his passage through the New Hebrides. It is 10 m. E-W. and 6 m. N-S., 2788 ft. high, and has 1500 inhabitants. Southwest point is in 20° 15′ 17″ S., 169° 44′ E. In control of the Presbyterian Mission.

Anganga (Agaga), high, uninhabited island of Fiji. The east end is in 16° 34′ 30″ S., 178° 38′ 20″ E.

Angasa is 150 ft. high and has three islets within the same reef in Fiji. 18° 55′ S., 181° 28′ E.

Angatau, also called Arackcheeff or Araktchev and Ahangatiu, is a low island of the Paumotu group, discovered by Bellingshausen in 1820; 200 inhabitants. 15° 52′ S., 140° 52′ W. **21.**

Angaur, see N'yaur, of the Palao or Pelew islands.

Angerimus Islands, in Geelvink bay on the north coast of New Guinea. 2° 50′ S., 135° 00′ E.

Angriffe, or Attack, is connected with New Ireland by a reef. It was called by the second name from a war-like attempt on a boat of the German war ship *Gazelle*. 2° 55′ S., 151° 08′ E.

Anhar, see Anaa or Chain, in the Paumotu archipelago.

Anil, islet of Namu, Marshall islands.

Aniwa, or Immer or Nina, of the New Hebrides, is about 2 m. long. It is a station of the Presbyterian Mission. 19° 18′ S., 169° 38′ E.

Anna, or Current, was discovered in 1761; it is low, half a mile in diameter, and inhabited. 4° 39′ N., 132° 04′ E.

Annan Islands, three in number, off the north end of Viti levu, Fiji. The group extends 4 m. by 0.7 m., and rises to a height of 610 ft. North point, 17° 30′ 40″ S., 178° 12′ E.

Annamokka, or Rotterdam, Tasman's name for Namuka of the Tongan group.

Annatam, a form of Aneiteum, of the New Hebrides.

Anne, islet in the Bismarck archipelago. 4° 57′ S., 151° 12′ E.

Annula, see Anuda.

Anologo, one of the Matema islands, Santa Cruz group. 10° 07′ S., 165° 38′ E. It extends 1 m. E-W., and is 120 ft. high; W. ¾ S., 17 m. from Nukapu. British protectorate August 18, 1898.*

Anonima, see Namonuito, Caroline islands.

Anser, or Glennie, a small group west of Wilson point, south coast of Australia in Bass strait.

Anson, 13° 0′ N., 141° 35′ E., is of doubtful report. A name of Buka in the Solomon group.

Ant, of Andema group, Caroline islands. 6° 44′ N., 157° 53′ 30″ E.

Antipodes, rocky, uninhabited group, 1100 ft. high. 40° 40′ 53″ S., 178° 43′ E. Not exactly the antipodes of London. Belongs to New Zealand. Called also Penantipode.

Anuanuraro, of the Paumotu archipelago, is a lagoon island named by Quirós, in 1606, San Miguel Archangel. 20° 24′ 57″ S., 143° 31′ 12″ W.⊙ **21.**

Anuanurunga, of the Paumotu archipelago, also called Four Crowns and Cuatro Coronadas, was discovered by Quirós in 1606. 20° 38′ S., 143° 19′ W. **21.**

Anuda, or Cherry, was discovered in 1791 by Captain Edwards in the *Pandora*. It is 1.5 m. in diameter and 325 ft. high. The inhabitants are Polynesian, make neat canoes, chew betel, and the men have an average height of 5 ft. 11 in. British protectorate declared Oct. 1, 1898. 11° 40′ S., 169° 40′ E. **12.**

Anutunga, low islet near Ngaloa bay on the north coast of Vanua levu, Fiji. 16° 37′ S., 178° 40′ E. Inhabited. **14.**

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*For the official notices of these Protectorates I am indebted to H. B. M. Consul in Honolulu, W. R. Hoare Esq.

Anuu, islet, 65 ft. high, east of Tutuila, Samoan islands. 14° 18′ 40″ S., 170° 30′ 40″ W. Belongs to the United States. **15.**

Aoba, Omba or Leper, of the New Hebrides, was named by Bougainville Isle des Lépreux under a mistaken diagnosis. It is 17 m. long, 3000–4000 ft. high, and inhabited. 15° 15′ S., 167° 50′ E. **12.**

Aoré, islet off the southeast coast of Espiritu Santo in the New Hebrides. The natives of this region are all cannibals.

Aoura, islet of Mokil in the Caroline archipelago.

Apaiang, or Charlotte, in the Gilbert group, was discovered by Captain Marshall in the *Charlotte.* It extends 16 m. by 6 m. and consists of six islets on a high reef. Population in 1886, 1300. The islets are Terio or Marshall, Allen, Gillespy, Clerk, Smith and Armstrong. Southeast point is in 1° 43′ 25″ N., 173° 06′ 45″ E. **7.**

Apamama, Hopper or Roger Simpson, in the Gilbert group, was discovered by Captains Marshall and Gilbert in 1788. It extends about 12 by 5 m. and the islets are about 5 ft. above the sea. Population, 650. Northwest point 0° 30′ N., 173° 53′ 35″ E. **7.**

Apapa, or Cabras, on the west coast of Guam, Marianas.

Apataki, or Hagemeister atoll, in the Paumotu archipelago, was discovered by Captain Hagemeister in 1830. It extends 17 m. N-S.; is a low coral atoll and inhabited. The northwest point is in 15° 14′ S., 146° 32′ W. **20.**

Api, called also Tasiko and Volcano, in the New Hebrides, extends about 25 m. NW-SE., and is 6–10 m. wide; fertile, well wooded, densely peopled; 2800 ft. high. 16° 38′ S., 168° 12′ E. **12.**

Apia, a name of Apaiang, Gilbert group.

Aplin, see Idika, New Guinea.

Apolima, of the Samoan Group, is an extinct volcano, 547 ft. high, and five sea miles from Savaii. It covers 1.8 sq. m. 13° 49′ 30″ S., 172° 03′ W. **15.**

Ara, of the New Hebrides, is a wooded islet on the fringing reef of Valua, off the southwest point. It has perhaps 100 inhabitants.

Arabi, or Hat, of the New Hebrides, is an islet off Tangoa on the south coast of Espiritu Santo.

Arag, of the New Hebrides, called also Pentecost, Whitsuntide, Bougainville, is 38 m. long, and 2000 ft. high. Its inhabitants are noted for their large canoes. North end is in 15° 25′ S., 168° 07′ E. **12.**

Araktcheeff, an islet of Maloelab in the Marshall group.

Araktcheeff, or Araktchev, see Angatau, Paumotu archipelago. **21.**

Aranuka, or Henderville, of the Gilbert group, was discovered by Captains Marshall and Gilbert; is 6.5 by 5.5 m. The northeast point is in 0° 13′ 25″ N., 173° 41′ E. **7.**

Aratika, or Carlshov, of the Paumotus, was discovered by Roggewein in 1722, and named Carlshov by Kotzebue. It is 20 m. west from Kawehe, and is 8 × 5 m.; wooded and inhabited. The west point is in 15° 33′ 25″ S., 145° 39′ W. **21.**

Arayonzet, of the Pelew group, lies south of Kayangle with Carapellas and Korack on a reef extending 4.5 m. N-S., 5 m. E-W.

Arch, two islets on a reef nearly three miles in circumference, in 10° 47′ S., 150° 46′ E. The highest is 360 ft.; they are variously called Nasa peipei, Nasa ruarua and Koia reibareiba, Ilei.

Archangel, see Anuanuraro of the Paumotus. **21.**

Archipel du Saint Esprit, a name given by De Fleurieu to the New Hebrides.

Arden, islet in Torres strait. 9° 54′ S., 142° 57′ E.

Arecifos, see Udjelong in the Marshall group. **6.**

Arimoa, three islets on the north coast of New Guinea, 500 ft. high, wooded and inhabited. 1° 45′ S., 138° 45′ E.

Aris, a volcanic island on the north coast of New Guinea, two miles northwest from Vulcan; about 700 ft. high. 4° 00′ S., 144° 56′ E. **8.**

Arnavon, islet off Choiseul, Solomon group. 7° 25′ S., 158° 00′ E. **11.**

Arno, of the Marshall group, is also called Arhno, Daniel or Pedder. It is the largest reef, or at least has the most land, of any in the Ratak chain, as it is more than 300 m. in circumference. The islets, among them Tagelib, High and Ine, are not more than 6–8 ft. above the sea but support a population of 3000 (in 1882). Islets at the north and south extremes are often at war with each other. Northeast point, 7° 30′ N., 171° 55′ E. **6.**

Aro, islet east of Tabutha, Fiji. 17° 42′ 30″ S., 181° 22′ W. **14.**

Arorai, or Hurd of the Gilbert group, was discovered from the brig *Elisabeth* about 1809, and was named Hope; changed to Hurd by Purdy. A well wooded atoll 6–7 m. NW-SE., a mile and a half wide. Population in 1883, 1200. 2° 39′ S., 177° 01′ E. **7.**

Arossi, see San Cristóbal of the Solomon group. **11.**

Arova, or Rossel, see Roua of the Louisiade archipelago. **9.**

Arrecifos, of Villalobos (1545), are the Pelew islands.

Arrowsmith, see Majuro of the Marshall group. **6.**

Arsacides, Terre de, a name given in 1769 by Surville to Malaita, Solomon islands.

Art, largest of the Belep group, northwest of New Caledonia. It is 11 m. NW-SE. **13.**

Arteck, islet off north point of Babeltop, Pelew islands.

Arthur, islet of Eniwetok of the Marshall group. 11° 40′ N., 162° 15′ E.

Aru, two islets on the north coast of New Guinea.

Arutua, of the Paumotu archipelago, the Rurick of Kotzebue, is a lagoon atoll 20 ft. high. The natives are of Tahitian origin. The northwest point is in 15° 10′ S., 146° 49′ 20″ W. **20.**

Arzobispo, one of the Volcano group south of the Bonin islands.

Asaua, or Asawa, see Yasawa, Fiji.

Ascension, see Ponapé, Caroline archipelago.

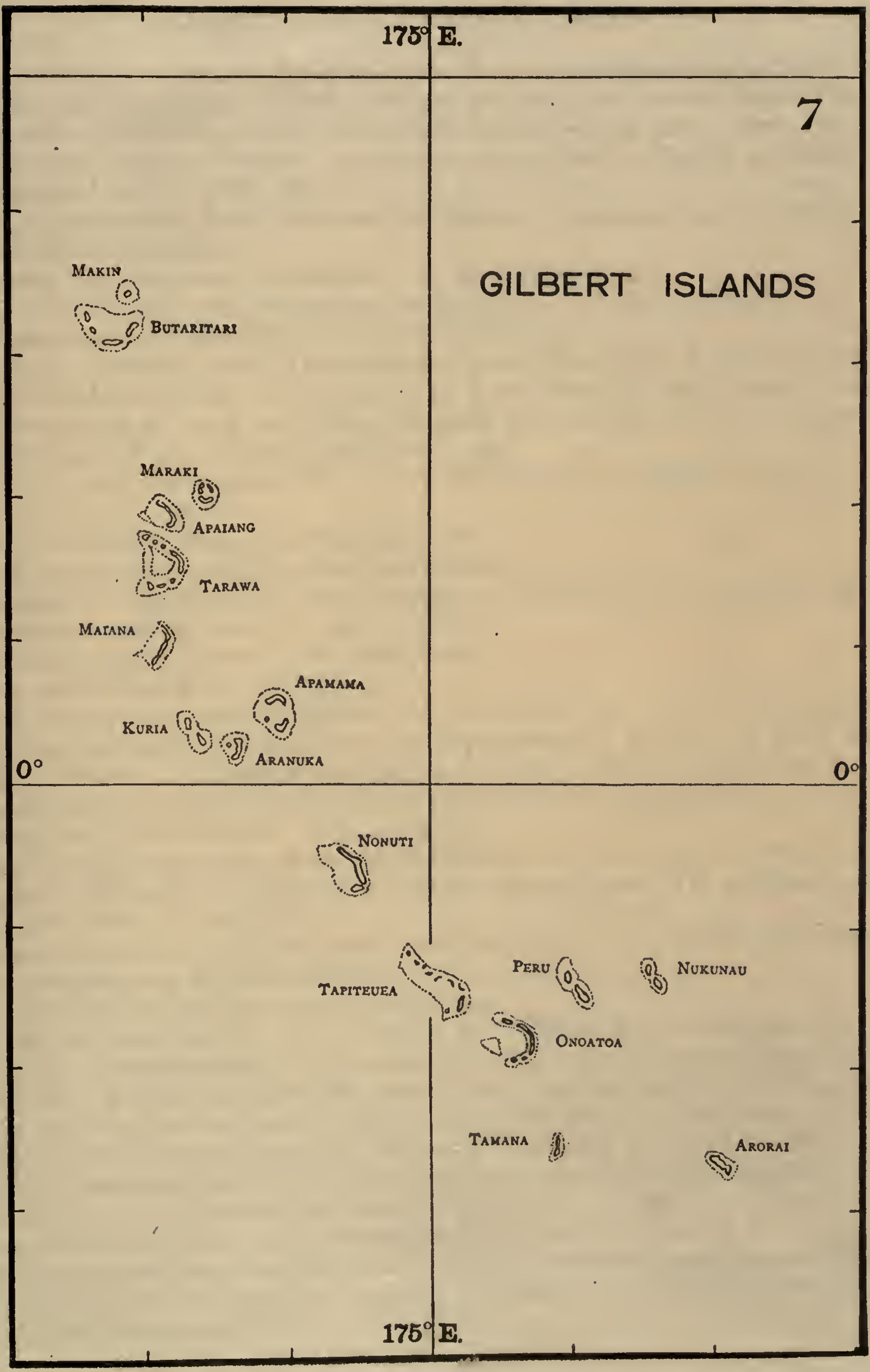
Asia, islets east from Gilolo; low, wooded. 1° 00′ N., 131° 17′ E. Another group with same name off coast of Peru.

Asore, see Tanna, New Hebrides.

Asouni, islet in Makira bay of San Cristóbal, Solomon islands.

Asuncion, or Assumption, in the Marianas, 19° 45′ N., 145° 29′ E. A volcanic cone about a mile in diameter and 2800 ft.± high, 54 m. N. by W. from Agrigan. The west side is covered with vegetation. Discovered by La Pérouse Dec. 14, 1786.

Ata, or Pylstaart (Tropic-bird) in the Tongan group, was discovered by Tasman in 1643. Island northeast from Tongatabu; 3 m. long, 1165 ft. high, uninhabited. 22° 20′ S., 176° 12′ 30″ W. **18.**


175° E.
7
GILBERT ISLANDS
MAKIN
BUTARITARI
MARAKI
APAIANG
TARAWA
MAIANA
APAMAMA
KURIA
ARANUKA
0°
0°
NONUTI
TAPITEUEA
PERU
NUKUNAU
ONOATOA
TAMANA
ARORAI
175° E.

Atafu, or Oatáfu, a closed coral lagoon of the Union group, discovered by Byron in 1765. Also called Duke of York. It is 3 m. E-W., 2.5 m. N-S., 8–10 ft. high. There are said to be 63 islets covered with pandanus and coconut trees. Some 260 inhabitants; subject to Fakaafo. 8° 39′ 40″ S., 172° 28′ 10″ W. British protectorate proclaimed June 22, 1889. **17.**

Atana, a chain of islets lying northwest from Rotuma. The eastern is Wea (Emery); the western, Athaluna.

Atangota, islet northwest from Rotuma. 12° 30′ S., 177° 14′ E.

Atata, islet northwest from Tongatabu, Tongan group. 21° 03′ S., 175° 15′ W.

Athaluna, one of the Atana chain, northwest of Rotuma.

Atit, is a low, wooded islet in Tuo passage on the northeast coast of New Caledonia.

Atiu, of the Hervey group, was discovered by Cook March 31, 1777; called by him Wateeoo. It is 100 m. north from Mangaia, 20 m. in circumference, of uplifted coral, 394 ft. high. 19° 59′ S., 158° 06′ W. **23.**

Ato, islet of the Yasawa group, Fiji, between Matathoni and Yangati. 16° 59′ 30″ S., 177° 18′ 25″ E. **14.**

Attack, see Angriffe, Bismarck archipelago. **10.**

Attack, islet in delta of the Fly river, New Guinea.

Auckland, an uninhabited group belonging to New Zealand, discovered in 1806. Northeast cape, 50° 30′ 25″ S., 166° 19′ 12″ E.

Aukena, islet of Mangareva. Also called Elson.

Aulong, see Orolong of the Pelew group.

Auotu, of the Hervey group, was discovered by Cook in 1773. It is a twin islet with Manuae enclosed by one reef, barren, with few inhabitants. 19° 14′ S., 158° 58′ W. **24.**

Aura, or Duperrey, is an islet of Mokil in the Carolines. 6° 40′ N., 159° 53′ E. **5.**

Aura, see Kaukura in the Paumotu archipelago. 15° 41′ S., 146° 50′ 30″ W.

Aureed, islet in Torres strait. 9° 57′ S., 143° 17′ E.

Aurh, Ibbetson or Traversey of the Marshall islands, is 15 m. long and from 4 to 9 m. wide. The lagoon is deep and surrounded with 32 islets. The northeast point is in 8° 18′ N., 171° 12′ E.

Aurobu, islet 150 ft. high on the south side of Bagaman in the Louisiade archipelago.

Aurora, see Maiwo of the New Hebrides.

Aurora, see Makatea of the Paumotu archipelago.

Austral, or Tubuai group, a name given by Mr. Williams in his "Missionary Enterprises in the South Seas" to a group of very little known islands in the southeast Pacific. They belong to France. Population, 1875, according to French reports. Of the group Vavitao is 100 ft. high, and was discovered by Broughton in 1791; Tubuai discovered by Cook 1777; Rurutu, discovered by Cook in 1769, is 1300 ft. high; Rimatera, discovered by Henry and Norurotu, Hull, Maria and Sands, discovered by J. R. Sands in 1845, complete the list.

Autano, an islet of Fakaafo, of the Union group. 9° 24′ 55″ S., 171° 12′ W.

Avea, of the Exploring group, Fiji, is a small island northeast from Vanua mbalavu, 3 m. in circumference and 600 ft. high. Population, 40. 17° 10′ 30″ S., 181° 06′ E.

Awakalo, see Alewakalou, Fiji.

Baba, see Torres islands.

Babagarai, or Smith islet on the southeast coast of New Guinea.

Babeltop, of the Pelew group, is also spelled Baobeltaob, etc. It is of irregular shape, 20 m. N-S. Mt. Aremolunguj is 2000 ft. high. Northeast end, 7° 40′ 30″ N., 134° 38′ 45″ E.

Bacon, Fiji, is a white rock 60 ft. high covered with guano within Argo reefs. 17° 04′ S., 178° 25′ W.

Badeneu, see Moali, Loyalty archipelago.

Badila beddabedda bonarua, westernmost and largest of the Brumer group on the coast of New Guinea, in 10° 45′ 24″ S., 150° 23′ 03″ E. It is 2.5 m. long, half a mile wide and 670 ft. high.

Bagabag, or Rich, the Sir R. Rich of Dampier, is 4 m. in circumference and 1500 ft. high. It is in 4° 50′ S., 140° 12′ E. **10.**

Bagaimotu, islet of the Tongan group.

Bagaman, or Stanton of the Louisiade archipelago is 2.5 m. E-W. by 1.7 m., and 720 ft. high. 11° 08′ S., 152° 40′ E.

Bagamoti, islet southeast coast of New Guinea, near Sideia; 115 ft. high.

Bagavirana, of the Conflict group, Louisiade archipelago. An atoll 10 m. E-W. by 5 m. N-S. Ten islets uninhabited; covered with Casuarina trees. Visited by H. M. S. *Conflict* in 1880. 10° 46′ S., 151° 46′ E.

Bagga, islet in bight on west side of Vella Lavella, Solomon islands. 7° 47′ S., 156° 30′ E.

Bagiagia, or Markham of the D'Entrecasteaux group, is an islet in Moresby strait between Dauila and Moratau. 9° 25′ S., 150° 25′ E.

Baibara, islet on coast of New Guinea. 10° 20′ S., 149° 36′ E.

Baibesika, islet on southeast coast of New Guinea, a mile east of Suau, 1.5 m. by 0.5 m., 560 ft. high; cultivated.

Baiiri, largest of the Dumoulin group; 365 ft. high, with few inhabitants. 10° 54′ 17″ S., 150° 44′ 52″ E.

Baiwa, with Pana wadi and Pana roran in the Rénard group, Louisiade archipelago.

Baker, or New Nantucket, was discovered by Captain H. Foster of the barque *Jamaica*. Taken by the United States in 1857. A guano island 1 m. E-W., 0.7 m. wide, 20 ft. high. 0° 13′ 30″ N., 176° 29′ 30″ W.

Balabio, off the northwest point of New Caledonia.

Baldwin, islet of the Yasawa group, Fiji. 17° 26′ 50″ S., 177° 00′ 45″ E. **14.**

Ballale, islet northeast of Shortland, Solomon islands. 6° 58′ S., 155° 52′ E.

Bampton, see Parama, coast of New Guinea.

Banabana, or Grange, on the coast of New Guinea, is low and wooded. 10° 22′ S., 148° 54′ E.

Banepe, see Panavi, Santa Cruz group.

Banga Netepa, see Panavi, Santa Cruz group.

Banganeda, see Matema. **12.**

Banks, in Torres strait. 10° 12′ S., 142° 15′ E. **8.**

Banks, in Spencer gulf, South Australia. 34° 30′ S., 136° 20′ E.

Banks group was discovered by Quirós and visited by Bligh in May, 1789. It consists of Vanna Lava, Gana, Mota, Valna, Ureparapara, with twelve islets. Annexed by Great Britain August 18, 1898. **12.**

Baranago, islet 120 ft. high in Utuha passage, south coast of Florida, Solomon islands.

Barclay de Tolly, see Raroia of the Paumotu archipelago. **21.**

Barena, of the Stewart islands or Sikaiana. **11.**

Baring, see Namorik of the Marshall group. **6.**

Barn, off Australian coast. 10° 49′ S., 142° 18′ E.

Barnard, N., coast of Australia. 17° 41′ S., 146° 12′ E.

Barnard, S., coast of Australia. 17° 52′ S., 146° 11′ E.

Barr, islet on the north side of Mille, Marshall group, east side of entrance to lagoon. 6° 14′ N., 171° 46′ E. **6.**

Barren (Cape), northeast from Tasmania, east entrance to Banks strait; 2300 ft. high. Another island of the same name is in the Hunter group northwest of Tasmania. 40° 25′ and 40° 32′ S.

Barrier (Great), in Hauraki gulf, New Zealand, also called Otea, is 21 m. by 10 m., and 2130 ft. high. In the same gulf is Little Barrier, 9 m. west from Great Barrier. Also called Houtouron. 4 m. N-S., 3.7 m. E-W.; 2400 ft. high.

Barrier islands, in the channel between Danila and Moratau of the D'Entrecasteaux group. 9° 24′ S., 150° 25′ E. **9.**

Barrington, of the Galapagos, was named by Colnett. 0° 50′ 30″ S., 90° 10′ W.

Barrow, see Vanavana of the Paumotu archipelago.

Bartlett, islet of Tutuila, Samoan islands, off Massefau bay.

Barwell, see Tucopia. **12.**

Basilaki, or Moresby, is a well wooded, densely populated island noted for the careful cultivation of kalo, sago, betelnut, sugar, indian corn, etc. It is 10 m. E-W. by 3.5 m.; 1326 ft. high. 10° 37′ S., 151° 00′ 35″ E. **9.**

Basilisk, see Sideia, New Guinea.

Bass, islet of Taumaco group. **12.**

Bass islands, or Maretiri, are 46 m. E. by S. from Rapa. Four islets, 346 ft. high, discovered by Captain Bass who first sailed through the strait, which bears his name, between Australia and Tasmania. 27° 55′ 30″ S., 143° 28′ 20″ W.

Bassakanna, a circular islet off the northwest coast of Malaita, Solomon group. 8° 22′ S., 160° 29′ E.

Basses, are low coral islands in the Louisiade archipelago. 10° 58′ S., 152° 45′ E. Gumaian is the largest and easternmost, Abaevara is at the other extreme, and Leiga with Isurauaraua complete the group.

Bass, reef-tied islet of Maloelab, Marshall group. **6.**

Bat, the westernmost of the Purdy group, discovered by Captain Bristow in 1817, consists of two flat islands and islet covered with coconut trees and enclosed by reef close to which no bottom at 20 fathoms. 2° 51′ S., 146° 12′ E. **10.**

Batanta, a long, narrow and mountainous island on the coast of New Guinea.

Bateman, a low islet of the Underwood group, Fiji. 17° 40′ 30″ S., 177° 14′ 20″ E.

Batiki, or Mbatiki, Fiji, is near the centre of the group; is 2 m. in diameter and 609 ft. high. Population in 1880, 342. 17° 46′ S., 179° 10′ E.

Bau, see Mbau, Fiji.

Baudissin, is at the northwest end of New Ireland, Bismarck archipelago, and extends 7 m. E-W. 2° 46′ S., 150° 40′ E.

Bauro, see San Cristóbal, Solomon islands. **11.**

Baux, see Nukuhiva, Marquesas group. **23.**

Bavo, islet 3 m. E. from Idiha on the Southeast coast of New Guinea.

Baxo trista, islet on southeast end of Oraluk reef, Caroline group, 50 ft. high. 7° 27′ N., 155° 24′ E. **4.**

Bayonnaise, islet at south entrance to Kuto bay, Isle of Pines. Named from French ship.

Beacon, islet of Australia. 12° 48′ S., 143° 36′ E.

Beagle, islet of Guadalcanar, Solomon islands. **11.**

Beaupré, or Eo of the Loyalty group, northwest of Uea, was discovered in 1782 by D'Entrecasteaux. Covered with coconut trees; inhabited. 20° 20′ S. Named for the Geographical Engineer of the *Recherche*.

Beautiful, a group in the Gulf of Carpentaria, north coast of Australia.

Bedford, see Vehanga of the Actæon group. **22.**

Bee, on the south shore of Huon gulf. 7° 30′ S., 147° 27′ E.

Beechey, islands of the Bonin group. 27° 08′ N., 142° 15′ E. Annexed by Japan.

Beika, on the southeast coast of New Guinea, east of Sariba; 130 ft. high; densely wooded.

Belcher = Taravai, islet of Mangareva.

Belep, five islets and a number of rocks northwest from New Caledonia. **13.**

Bellevue, group on the coast of New Guinea. Jervis island is the principal. 9° 56′ S., 142° 09′ E.

Bellingshausen, Society group, was discovered by Kotzebue in 1824. It is low and uninhabited. Named for the distinguished Russian navigator. 15° 48′ S., 154° 30′ W. **20.**

Bellona, of the Solomon group, was discovered by Captain Wilkinson in the *Indispensable*, 1790. It is small, 400 ft. high, and uninhabited. August 18, 1898, it was declared a part of the British Solomon islands Protectorate. 11° 25′ S., 159° 45′ E. **11.**

Bentinck, one of the Wellesley group in the gulf of Carpentaria.

Bentley, see Anagusa, Louisiade archipelago.

Bega, see Mbenga of Fiji.

Berriberrije, or Slade, Louisiade archipelago, is the northwest and most conspicuous of the Engineer group, 1.7 m. NW-SE., half a mile wide, 596 ft. high. 10° 37′ S., 151° 16′ E.

Bertrand, on the north coast of New Guinea. 3° 11′ S., 143° 10′ E. Low and wooded, near Schouten.

Berry, islet 60 ft. high, of the St. Andrew group, Admiralty islands.

Berud, see Kuria of the Gilbert islands.

Bet, see Burrar in Torres strait.

Beverley, a group off the east coast of Queensland, Australia. 21° 30′ S., 149° 45′ E.

Biak, is separated from Korrido by a narrow channel, the two forming the Schouten islands. 1° S., 136° 02′ E. Little known.

Bickerton, see Laté, in the Tongan group. **18.**

Bigali, see Pikelot, Caroline islands.

Bigar, another form of Bikar, Marshall islands.

Bigedj, islet of Kwadjelin, Marshall islands.

Bigini, see Bikini, Marshall islands.

Biguela, see Pikelot, Caroline islands.

Bikar, or Dawson, consists of three islets on the east side of the atoll in the Marshall islands. According to Kotzebue the centre of the group is in 11° 48′ N., 170° E.

Bikerei, islet of Maiana, Gilbert group. 1° 00′ 20″ N., 173° 00′ 45″ E. **7.**

Bikini, or Eschscholtz, was discovered by Kotzebue in Oct. 1825. Marshall group, 18 m. N-S. South point is, according to Brown, 11° 33′ N., 165° 37′ E. **6.**

Bilibili, in Astrolabe bay, New Guinea. 5° 20′ S., 145° 46′ E. Natives are enterprising traders and make excellent pottery.

Bindloe, of the Galapagos, is 800 ft. high. 0° 18′ 50″ N.

Bio, 2 m. northwest from Ugi, Solomon islands; coral islet 100 ft. high, uninhabited.

Birara, a name of a district of New Guinea, sometimes incorrectly applied to the whole island.

Bird, islet on east coast of Admiralty. 2° 08′ S., 147° 14′ E.

Bird, islet in passage between Mbenga and Viti levu, Fiji. 18° 19′ 20″ S., 177° 58′ 15″ E.

Bird, islet of Palmyra.

Bird, see Farallon de Medinilla of the Marianas.

Bird, see Nihoa of the Hawaiian group.

Bird, see Reitoru of the Paumotu archipelago.

Bird, a name given by Cook to Hikueru, Paumotu archipelago.

Bird, a small group off the Australian coast. 11° 47′ S., 143° 06′ E.

Birnie, of the Phœnix group, was discovered by Captain Emment. It is a mile long and not more than 6 ft. above the sea. 3° 34′ 15″ S., 171° 42′ W. British protectorate July 10, 1889.

Bishop, see Nonuti, Gilbert group. Also Tapituea of the same group.

Bishop and his Clerk, rocky islets south from Macquarie. 55° 15′ S., 160° 10′ E.

Bishop Junction, see Erikub, Marshall islands.

Bitutu, islet of Tarawa, Gilbert group. 120° 33′ N., 172° 55′ 30″ E.

Biu, islet 2 m. northwest from Ugi, Solomon group. 1.5 m. long, 240 ft. high. 10° 11′ S., 161° 38′ E.

Biva, a low, coconut-covered, inhabited islet a mile in length, 10 m. west from Yasawa group, Fiji. 17° 08′ 30″ S., 176° 52′ 30″ E.

Blackney, or Blakeney, a low, wooded island in the Louisiade archipelago.

Blair, Fiji. 18° 30′ 10″ S., 177° 36′ E.

Blake, see Motuiti of the Marquesas.

Blunt, Fiji. 18° 52′ S., 178° 24′ 40″ E.

Blanchard, of D'Entrecasteaux, is the island known as Doini. 10° 42′ S., 150° 40′ E.

Blanche, islet 280 ft. high, on the north coast of Rendova, Solomon islands.

Blaney, see Nonuti of the Gilbert group.

Blelatsch, islet of Yap, Caroline archipelago. 9° 30′ 10″ N., 138° 04′ 42″ E.

Bligh, see Mematangi of the Paumotu archipelago.

Bligh, Ureparapara of the Banks group. There is a Bligh island in Nootka sound, and another off the coast of Alaska. The name recalls the commander of the *Bounty*.

Blosseville, a high, steep, wooded crater with several villages on the crater edge. 3° 36′ S., 144° 32′ E. **8.**

Blunt, see Mbulia, Fiji.

Bobo, or Bristow, a low, mangrove-covered island, 11–12 m. in circumference on the coast of New Guinea. 9° 08′ S., 143° 14′ E.

Bobo eina, or Huxley of the Louisiade archipelago, is 800 ft. high and thickly wooded.

Bobu, islet on the north coast of Murua or Woodlark island. 8° 58′ S., 152° 46′ E.

Boiaboiawagga, islet in the Louisiade archipelago a quarter-mile long E-W., densely wooded.

Bock, islet of Ailinglablab, Marshall group. Another of the same name is an islet of Udjae.

Bogen, islet of Maloelab, Marshall islands.

Boh, islet in Tanle bay on the northeast coast of New Caledonia.

Boigu, or Paigo, a low, swampy island 6 m. E-W., 2 m. N-S., near the mouth of the Mai Kassa river on the south coast of New Guinea. 9° 20′ S., 142° 15′ E.

Boimagi, of the Kiriwina or Trobriand group. 8° 31′ S., 150° 52′ E.

Boirama, a grassy islet 290 ft. high, northeast from Nukata in the Louisiade archipelago.

Bolabola, or Borabora of the Society group, is mountainous and picturesque, rising in Mt. Pahia to 2165 ft. Large population. North end is in 16° 22′ S., 151° 40′ W. **20.**

Bolang, on the coast of New Guinea. 2° 03′ S., 131° 56′ E.

Bonabe, Panopea, Baanopa, or Ocean, of the Gilbert islands, was discovered in 1804 from the ship *Ocean*. It is 10–11 m. in circumference. 0° 52′ 02″ S., 169° 35′ E.

Bonabona = Torlesse, islets in the Louisiade archipelago.

Bonham, see Jaluit of the Marshall islands.

Bonin, Bonin-sima, a chain extending almost N-S. from 27° 45′ to 26° 32′ N., divided into four small groups, Parry, Kater, Peel and Coffin. They are high and volcanic; except a small colony on Peel they are uninhabited. Probably discovered by Japanese fishermen about 1675, they were unknown to the world till 1823 when Captain Coffin, an American whaler, discovered and took possession of the southern group. In 1824 John Ebbets, another American, discovered the central since called Peel. Visited by Lütke 1828, Beechey 1827, Collinson 1853, and by Commodore Perry. Claimed by Japan.

Bonnawan, a grassy islet a mile N-S., and 335 ft. high, in the Louisiade archipelago.

Bonvouloir, a group in the Louisiade archipelago seen by D'Entrecasteaux. It extends in a slight curve about 20 m. NW-SE. Inhabitants are Papuans. East islet is 500 ft., Hastings 10 m. to WNW. is 400 ft. high. Five miles beyond there are 3–4 islets on the same reef. Centre 10° 20′ S., 151° 56′ E. Bonvouloir was an officer on the *Recherche*.

Booby, a bare, uninhabited rock 35 ft. high in Torres strait. 10° 36′ 05″ S., 141° 54′ 45″ E.

Bordelaise, see Oraluk of the Caroline islands.

Borne, islet 50 ft. high off Hanaiapa bay on Hivaoa, Marquesas islands.

Bory, islet of Ruk, Caroline islands. 7° 14′ N., 151° 39′ 37″ E.

Boscawen, see Tafahi of the Tongan islands. **18.**

Botany Isles of Cook are between New Caledonia and Isle of Pines.

Boucher, see Tiger of the Loyalty group.

Boudeuse, low, uninhabited island, shaped like a horseshoe open to the west. Discovered by Bougainville August 9, 1768, and named after his ship. 1° 25′ S., 144° 32′ E.

Bougainville is the largest of the Solomon islands; extends 110 m. NW-SE., and is 30 m. wide; very mountainous, with volcanic peaks reaching nearly 10,000 ft. Bagana, in the centre, is active. Owing to the ferocity of its inhabitants little is known of the interior. Cannibals all. The north point is in 5° 24′ S., 154° 38′ E. **11.**

Bouka, or Buka of the Solomon islands, is much lower than Bougainville, more fertile and more populous. Natives said to have the finest physique in the group; they are active and daring cannibals. The north point is in 5° S., 154° 35′ E. **11.**

Bounty, a group of 24 islets and rocks, inhabited and belonging to New Zealand. Discovered by Captain Bligh of the *Bounty*, Sept. 19, 1788. 47° 50′ S.

Bourke, islet in Torres strait. 9° 52′ S., 143° 22′ E.

Bouro, see San Cristóbal, Solomon islands.

Bow, see Hau of the Paumotu archipelago. **21.**

Bowditch, see Fakaafo of the Union group. **17.**

Bowerick, islet of Oneatoa, Gilbert islands. 1° 47′ 40″ S., 175° 35′ 20″ E. **7.**

Brackenridge, low, 1 m. long, off Vanua levu, Fiji. 16° 33′ S., 178° 47′ 20″ E. Named for the botanist of the United States Exploring Expedition under Wilkes.

Bramble Cay, see Massaramcoer. Sand islet at northeast boundary of Queensland colony.

Brampton, see Parama, New Guinea coast.

Brander, islet of Rahiroa of the Paumotu archipelago.

Brattle, islet of Albemarle in the Galapagos.

Brewer, islet in China strait. 10° 34′ 30″ S., 150° 43′ 45″ E.

Brierly, see Daddahai in the Louisiade archipelago.

Bristow, see Bobo on the New Guinea coast. 9° 08′ S., 143° 14′ E.

Britannia, another name of Maré, Loyalty group.

Broadmead, one of the St. Andrew group, Admiralty islands.

Brocke, see Jarvis.

Brongniart, islet of Ruk, Caroline islands. 7° 33′ 30″ N., 151° 47′ 02″ E.

Brooker, see Utian of the Louisiade archipelago.

Brown, same as Bikini of the Marshall group.

Brown, see Eniwetok of the Marshall islands.

Brown, see Lae of the Marshall islands. Named for Captain J. W. Brown who discovered it.

Brown, islet in Henry Reid bay on the east side of New Britain.

Browne is low, wooded, on the same reef with Carpenter and Tracey in Nares harbor, Admiralty group.

Brumer, see Tassai, coast of New Guinea.

Brumer group consists of six small basaltic islands; largest and westernmost 2.5 m. by 0.5 m., 665 ft. high, inhabited. 10° 46′ S., 150° 22′ E. People use canoes with outrigger and double mat sails. The other islands are Badila beddabedda bonarua, Harikoa, Gobi gobi, Bugomaki and Abana.

Buchanan, in the Admiralty group. 1° 56′ S., 146° 28′ E.

Budd, an extinct volcano, 800 ft. high, in the Ringgold group, Fiji. 17° 26′ 30″ S., 180° 23′ E.

Buen viage (Isla de), discovered by Quirós July 8, 1606. Probably one of the Gilbert islands. Quirós says: "Este dia se vió una isla de hasta seis leguas de boj; y porque hasta aquí no se habia encontrado tierra alguna ni bajo, ni otra cosa que impidien nuestro camino, se le puso por nombre *Buen Viage:* su altura son tres grados y medio parte del Norte. Acordóse de no ir á ella por no ser ya á propósito y por el riesgo de ser baja." *Viages de Quiros, I., 358.* This day was seen an island about six leagues in circuit; and because thus far we had encountered neither land nor shoal, nor other thing which might impede our way, we bestowed the name *Good Voyage.* Its latitude is three and a half degrees North. It was determined not to land as it was not convenient and there was risk of reefs.

Buena Vista, or Vatilau of the Solomon islands, is 1050 ft. high. 8° 53′ 30″ S., 159° 59′ 30″ E. **11.**

Bugomaki, one of the Brumer group, 220 ft. high.

Bugotu, the native name (of a part) of Ysabel, Solomon islands.

Buhi, islet on northwest extreme of the Tongan group, on the same reef with Ofolanka.

Bukalau, low islet of Fiji. East point, 16° 12′ 20″ S., 179° 45′ 50″ E.

Bulia, see Mbulia in the Kandavu group, Fiji.

Bull, islet of St. Andrew group, Admiralty islands.

Bultig, or Hump islet, in Geelvink bay, New Guinea; 10–12 m. × 4 m.

Bunatik, islet on the southeast coast of Ponapé, Caroline islands.

Buninga, southwesternmost island of the Shepherd group, New Hebrides. Three-quarters of a mile NE-SW. 723 ft. high. A hundred inhabitants, all Christian.

Bunker, another name of Jarvis.

Bunkey, see Namonuito of the Caroline islands. **4.**

Buraku, or Murray, an uninhabited volcanic peak, 1000 ft. high, northwest from Guadalcanar, Solomon islands. 8° 59′ S., 158° 35′ E.

Buriwadi, islet of the Kiriwina or Trobriand group. 8° 32′ S., 150° 52′ E.

Burke, islet on the coast of New Guinea. 10° 10′ S., 142° 30′ E.

Burnett, see Noina of the Louisiade archipelago.

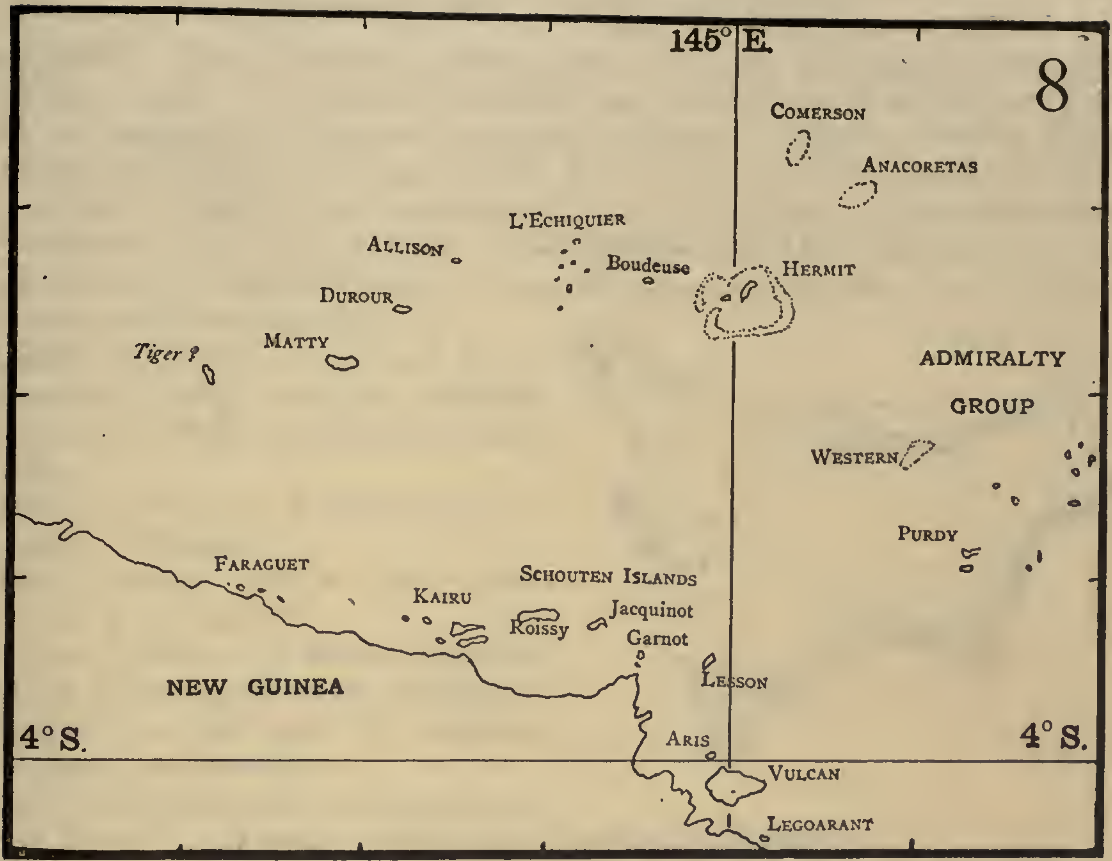
Burrar, or Bet, of the Three Sisters (Bet, Suc, Poll) in Torres strait. 10° 10′ S., 142° 50′ E.

Burrh, islet at the entrance of Port Rhin on Lukunor, Marshall islands. 6° 14′ N., 171° 46′ E.

Burrows (1842), see Maré, Loyalty group.

Burwan, inhabited islet in Malo pass, off Espiritu Santo, New Hebrides.

Bushy, islet off Australian coast. 10° S., 142° 58′ E.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145° E.
COMERSON
ANACORETAS
L'ECHIQUIER
ALLISON
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HERMIT
DUROUR
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Tiger ?
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GROUP
WESTERN
PURDY
FARAGUET
SCHOUTEN ISLANDS
KAIRU
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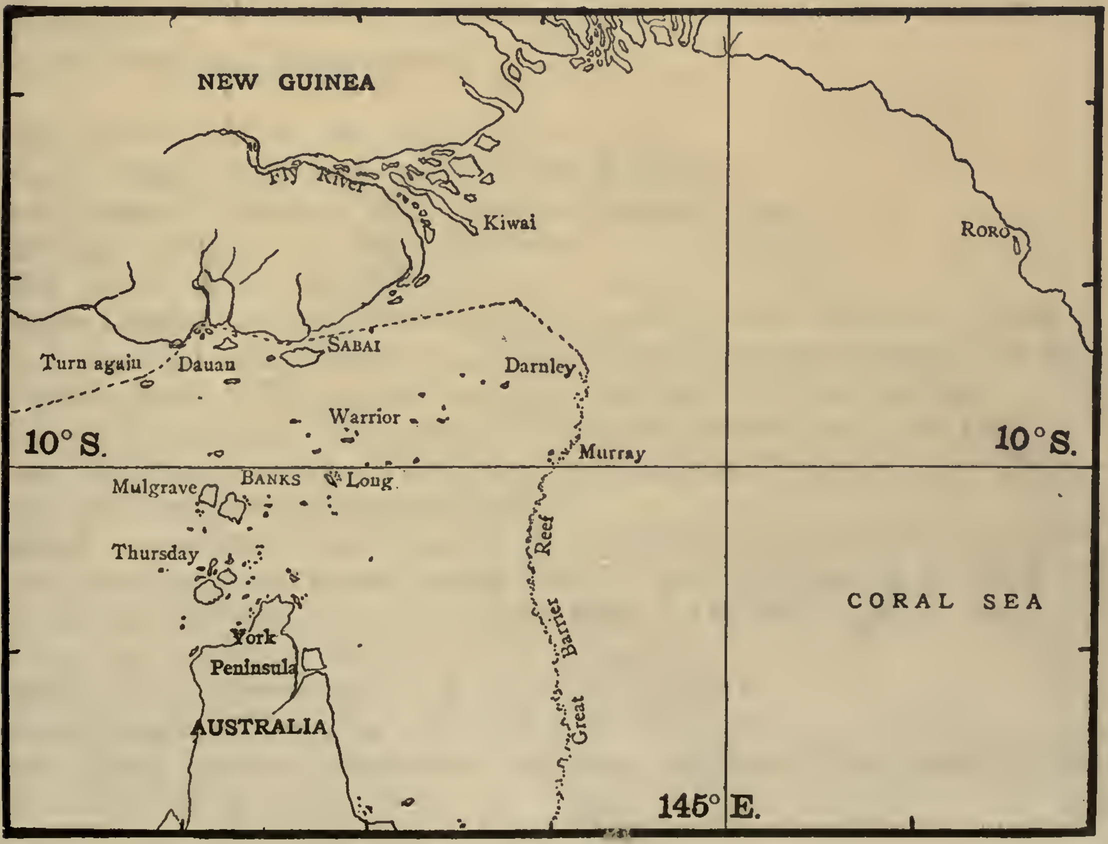

NEW GUINEA
Fly River
Kiwai
RORO
SABAI
Turn again
Dauan
Darnley
Warrior
10° S.
10° S.
Murray
Mulgrave
BANKS
Long
Thursday
York
Peninsula
AUSTRALIA
Great Barrier Reef
CORAL SEA
145° E.

Butaritari or Touching in the Gilbert group, is an atoll of triangular form, about 14 m. on a side. As shown in the figure, most of the land is on the south side of the lagoon and there are the principal villages. Namaka, Nakudi, Pikhat, Ourik and Napuni are the main islets. The entrances to the lagoon are on the west side. The northwest point is in 3° 14′ N., 172° 39′ 50″ E. In 1886 the population was 3000, all protestants. The American Board has a station here. The south side is a continuous grove of coconut and pandanus, and a large amount of copra is exported annually. **7.**

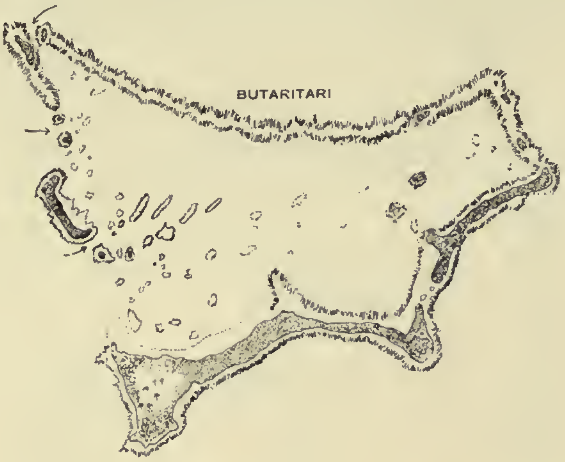


FIG. 3.

Butchart, or Dekatua, is an islet of the Engineer group, Louisiade archipelago, 350 ft. high, covered with coconut trees.

Button is a low islet in Shallow bay of Admiralty island.

Button, a grassy islet in China strait. 10° 34′ S., 150° 44′ E.

Button, see Utirik, of the Marshall islands.

Byam, see NGanati, Paumotu archipelago.

Byam Martin, an old name of Vairaatea, Paumotu archipelago.

Byer, see Patrocinio of the Hawaiian group.

Byron, island in Engineer group of the Louisiade archipelago.

Byron, on the southeast coast of New Guinea; forms a triangle with Grant and Shortland.

Byron, see Nukunau, Gilbert islands. **7.**

Cabeva, islet of Fiji. 16° 11′ 20″ S., 179° 34′ 45″ E.

Cabras, see Apapa on the west coast of Guam, Marianas.

Cadmus, a name of Morane of the Paumotu archipelago. **22.**

Cairncross, a group on the Australian coast. 11° 15′ S., 143° E.

Calalin, islet of Majuro, Marshall islands. 7° 09′ N., 171° 13′ E.

Calvados Chain, Louisiade archipelago; a series of high islands extending 45 m. from Panasia. The villages are generally on the northern sides of the densely wooded islands. The canoes are large and fitted with oval mat sails. The inhabited islands are: Pana varavara, Utian, Panaudiudi, Toloi awa, Gulewa, Ululina, Moturina, Panarora, Paba baga, Pana numara, Panantinian and Panawina.

Calvert, see Maloelab of the Marshall group.

Campbell, an uninhabited group 30 m. in circumference; discovered in 1810 by Captain Hazelburgh and named for the owner of the brig in which he sailed. Dent lies to the northwest, Jacquemart to the south. The highest hill is 1500 ft. high. 52° 33′ 44″ S., 169° 09′ 09″ E.

Campbell, islet in Torres strait. 9° 33° 08″ S., 143° 29′ E.

Candelaria Shoals, of Mendaña, now called Roncador. **11.**

Cannac, a rock 200–250 ft. high, 9 m. west from Laughlan. Discovered by Dumont D'Urville. 9° 18′ S., 153° 27′ E.

Canton, Mary Balcout or Swallow, in the Phœnix group, is a low, sandy island 11 m. long, 50–500 ft. wide and 10–18 ft. high. 2° 44′ 35″ S., 171° 42′ W. **17.**

Cap, islet between Gibba and Turtlebacked, off New Guinea. 9° 49′ S., 142° 42′ E.

Cap, see Tabutha, Fiji. **14.**

Capeniur, islet of Ailuk, Marshall islands. 10° 17′ 25″ N., 169° 59′ 20″ E. **8.**

Carapellas is south of Kayangle, Pelew islands, with Arayonzet and Korack on a reef 4.5 m. N-S., 5 m. E-W.

Carlshoff, see Aratika, Paumotu archipelago. **21.**

CAROLINE ISLANDS.

Native Name.	Chart Name.	Discoverer.	Latitude North.	Longitude East.	Authority.	Population.
Western Group:						
NGoli.	Matelotas (Spenser). Lamoliork, Ulu.	Villalobos, 1543.	8° 17′ 0″	137° 33′ 0″	Cheyne.	100
Yap.	Ouap.	Hunter, 1791.	9 37	138 08	D'Urville.	2000
Uluthi.	Mackenzie.	Hunter, 1791.	10 06	139 50	Lütke.	200
Feys.	Tromelin, Fais.	Tromelin, 1828 (?).	9 46	138 16	"	300
Sorol.	Philip.	Hunter, 1791.	8 06	140 03	"	20
Central Group:						
Eurupig.	Kama.	Hunter, 1791.	6 40	143 10	Lütke.	50
Wolea.	Ulie, Thirteen Ids.	Wilson, 1793.	7 23 30	143 57	"	600
Ifalik.	Wilson.	Wilson, 1793.	7 14	144 31	"	200
Faraulep.	Gardner.	Lütke, 1828.	8 36	144 36	"	Uninhabited.
Olimario.		Lütke, 1828.	7 43	145 56	"	200
Grimes.	High.	Capt. Grimes, 1841.	9 15	145 33		
Elato.	Hawels.	Wilson, 1793.	7 30	146 19	"	300
Lamotrek.	Swede.	Wilson, 1793.	7 27	146 30	"	200
Faïn, West.	West.	Lütke, 1828.	8 03	146 50	"	Uninhabited.
Satawal.	Tucker.	Wilson, 1793.	7 22	147 06	Duperrey.	200
Pikela.	Lydia.	Ibargoïta, 1801.	8 38	147 13	"	Uninhabited.
Pikelot.	Coquille, Bigali.	Duperrey, 1824.	8 09	147 42	"	Uninhabited.
Suk.	Ibargoita.	Ibargoïta, 1799.	6 28	149 30	Freycinet.	100
Poloat.	Enderby, Kata.	Ibargoïta, 1801.	7 19 25	149 15	"	100
Tamatum.	Los Martires.	Ibargoïta, 1801.	7 27	149 28	Duperrey.	200
Namonuito.	Anonima, Bunker. Livingston.	Ibargoïta, 1801.	9 00	149 47	Lütke.	50
Faïn, East.	Lütke.	Lütke, 1828.	8 33 20	151 26	"	50
Namolipiafane.	Fananou.	Hall, 1824.	8 25 30	151 49 15	"	50
Morileu.	Hall.	Hall, 1824.	8 41	152 25	"	100
Ruk.	Hogoleu, Truk.	Duperrey, 1825.	7 43	151 46	D'Urville.	8000
Losap.	Duperrey.	Lütke, 1824.	6 53	152 42 20	Duperrey.	200
Nama.	D'Urville.	Duperrey, 1825.	6 59	152 33	Findlay.	
Namoluk.		Lütke, 1828.	5 45 15	153 16 30	Lütke.	300
Etal.	Mortlock Islands.	Mortlock, 1793.	5 35	153 43	Cheyne.	200
Lukunor.		Mortlock, 1793.	5 29 18	153 58	Lütke.	200
Satoan.		Mortlock, 1793.	5 17	153 46	"	500
Nukuor.	Monteverde, Dunkin.	Monteverde, 1806.	3 52	154 56	Findlay.	500
Oraluk.	Bordelaise, San Agostino	Tompson, 1773.	7 38	155 09	"	Uninhabited.
Eastern Group:						
NGatik.	Los Valientes, Raven.	Tompson, 1773.	5 47 30	157 32	Findlay.	30
Pakin.	Peguenema.	Lütke, 1828.	7 02	157 47 30	Cheyne.	50
Andema.	Ant.	Fraser, 1832.	6 45	158 00	"	Uninhabited.
Ponape.	Ascension, Puynipet.	Lütke, 1828.	6 48	158 07	Lütke.	5000
Mokil.	Duperrey, Wellington.	Duperrey, 1824.	6 39	159 53	Duperrey.	80
Pingelap.	Musgrave, McAskill.	Musgrave, 1793.	6 12	160 53	McAskill.	300
Kusaie.	Ualan, Strong.	Crozer, 1804.	5 19	163 06	Lütke.	700

Caroline Islands extend from the Pelew group to Ualan, and from 2° to 12° N., and with the Marshall and Gilbert groups are comprised in that portion of the Pacific usually called Micronesia. The name comes from that given by the Spanish Admiral Don Francisco Lezcano to a large island in the group not now identified. Duperrey and Lütke made the group known geographically, and to Dr. Luther Halsey Gulick, an American missionary, we are indebted for much information on both islands and inhabitants. The earliest account is by a Jesuit missionary, Juan Antonio Cantova, who visited portions of the group in 1721 and was killed at Mogmog ten years later. There are perhaps 877 square miles distributed over nearly fifty groups, most of them atolls. The table will show the distribution more clearly, but the population there given is only approximate. In 1885 the German gunboat *Iltis* took Yap, which Spain at once claimed and her claim was sustained by the Pope, acting as arbitrator. After the war with the United States, and the loss of Guam and the Philippines, Spain sold the entire group to Germany for $4,000,000.

Caroline, or Thornton, a group of low coral islands on one reef 7 m. long, 1 m. wide. Taken by England July 9, 1868. 10° 0′ 01″ s., 150° 14′ 30″ w.

Carpenter, islet on the same reef with Browne and Tracey in Nares harbor, of Admiralty island.

Carr, a high island in the Hudson group, Fiji. North point in 17° 35′ s., 177° 01′ 30″ e.

Carry, crescent-shaped, uninhabited island in Fortescue strait, southeast coast of New Guinea, 1 m. ne-sw., 300 ft. high. 10° 34′ 45″ s., 150° 54′ 45″ e.

Carteret, a group of six islets on a circular reef 10 m. diameter, all inhabited and thickly wooded. Discovered by Captain Carteret in 1767. 4° 45′ s., 155° 20′ e.

Carysfort, see Tureia, Paumotu archipelago.

Case, a high island of the Hudson group, Fiji. 17° 37′ 30″ s., 177° 03′ 30″ e.

Casey, islet 1 m. north from Montravel, New Caledonia.

Castori, a high, rocky group on the southeast point of New Guinea. 10° 47′ s., 150° 38′ e. **9.**

Catherine, islet off Cape Ducie on the northeast coast of New Guinea.

Catherine, see Ujae, Marshall group.

Catto, islet 2 m. off southwest end of Eua, Tongan group. Discovered by Tasman in 1643. 21° 29′ s., 174° 50′ 30″ w.

Cérisy, islet of Ruk, Caroline islands. 7° 11′ 05″ n., 151° 51′ 36″ e.

Cette, another name for Eunauro on coast of New Guinea.

Chabral, see Lifu of the Loyalty group.

Chain, a low, wooded islet northeast of East cape, New Guinea.

Chain, see Anaa, Paumotu archipelago.

Chamisso, islet of Ruk, Caroline islands. 7° 16′ 48″ n., 151° 47′ 42″ e.

Champignon, islet in St. Vincent bay on southwest coast of New Caledonia.

Chanal, of Marchand, is Hatutu of the Marquesas group.

Chanter, islet off the east coast of Raoul, Kermadec group. 29° 15′ 30″ s., 177° 54′ 02″ w.

Chard, islet 4.7 m. long, 100 ft. high, off the coast of New Britain. 5° 27′ s., 150° 58′ e.

Charles, of the Galapagos is 24 m. in circumference; once settled, now deserted. 1780 ft. high.

Charles Hardy, see Nissan of the Bismarck archipelago.

Charlotte, another name for Apaiang, Gilbert islands.

Chas, see Wari, New Guinea.

Chase, see Tamana, Gilbert islands.

Chassant = Salat, of the Caroline islands.

Chatham, a group belonging to New Zealand and situated in 43° 48′ 59″ s., 176° 39′ 50″ w. It was discovered by Captain Broughton of the armed tender *Chatham* attached to Vancouver's expedition in 1791. At the time of the discovery there were some 1200 natives of a race resembling the Maori and called Moriori. They were a cheerful and healthy people dressed in seal skins, but when, in 1840, Dr. Dieffenbach visited the group, only 90 survived. In 1830 there had been an importation of 800 Maoris, and the present population is a very motley one. The largest island, Chatham or Warekauri, extends on the north coast 31 m., on the south about half that distance. Pitt or Rangihaute is 11 m. from Chatham and 8 m. long. A mile off the southeast end of Pitt is Rangatira or Southeast, and still farther to the southeast is Tarakoikoia or the Pyramid, a bare rock 566 ft. high. In 1868 this group was surveyed by the New Zealand Surveyor General, S. Percy Smith. Both the geological formation and the flora connect the Chatham islands with New Zealand.

Chatham, of the Galapagos, 19 m. NE-SW. by 8 m., 1650 ft. high. Only island of the group where water is always found.

Chaumont, see Hui-wadiamo of the Louisiade archipelago.

Cherry, see Anuda. **12.**

Chicayana, a spelling of Sikaiana or Stewart.

Chikuru, a name of the islet Pingelap, Caroline islands, usually called Tugulu on the charts.

Chissy, islet on the Maclay coast of New Guinea. 6° 02′ S., 147° 32′ E.

Choiseul, of the Solomon islands, was discovered in April, 1568, by Pedro de Ortega Valencia and Hernan Gallego, Mendaña's pilot. The present name commemorates the distinguished minister of Louis XV. In extent, 83×20 m., and 2000 ft. high; mountainous and wooded. The north point is in 6° 37′ S., 156° 27′ E. **11.**

Christina (Cristina), the old name of Tahuata, of the Marquesas islands.

Christmas, a low, lagoon island extending 44 m. E-W. Discovered by Cook December 24, 1777. The water of the lagoon is said to be remarkably salt. Annexed by Great Britain March 17, 1888. 1° 59′ N., 157° 32′ W.

Church, islet on south side of Huapu, Marquesas islands.

Cicia, see Thithia, Fiji.

Cicobia, see Thikombia, Fiji.

Clarence (Duke of), see Nukunono, of the Union group. **17.**

Clark, a low island of the Fiji group. 16° 22′ 24″ S., 179° 11′ 32″ E.

Clarke, island on the north side of Banks strait.

Clerk, see Onoatoa of the Gilbert islands.

Clerke, see Tekokoto of the Paumotu archipelago.

Clermont de Tonnerre, see Reao, Paumotu archipelago. Named for the French Minister of Marine.

Cliff, islet of the Australian coast. 14° 13′ S., 143° 48′ E.

Cliff, two islets off the coast of New Guinea. 9° 26′ S., 146° 56′ E.

Cliffy = Ikaika Keino of the Louisiade archipelago.

Chokach, an islet within the reef of Ponapé, Caroline islands, on the north side.

Clipperton, a lagoon island, uninhabited; discovered by Captain Clipperton in 1705. There is a deep hole in the lagoon, and trachytic rocks on the outer ring. Claimed by France. 10° 17′ N., 109° 13′ W.

Clock, islet on the Australian coast. 14° 04′ S., 144° 17′ E.

Cloquet, a name of Gicquel which was formerly described as an island on the north coast of New Britain; now known to be a peninsula. **10.**

Close, islet in the Bismarck archipelago. 4° 57′ S., 151° 18′ E.

Clute, see Hiti, Paumotu archipelago.

Coast, island off New Guinea, 300 ft. high, well-wooded, and with a fringing reef. 10° 35′ 25″ S., 150° 40′ 20″ E.

Cockatoo, islet in Thousand Ships bay, Solomon islands. 8° 33′ S., 159° 37′ E.

Cockburn, group off coast of Australia. 11° 51′ S., 143° 18′ E.

Cockburn, see Ahunui, Paumotu archipelago. **22.**

Coconut, in the Bismarck archipelago, with Leigh and the coast of New Ireland forms Carteret harbor. Inhabitants cannibals. 4° 42′ S., 152° 42′ E.

Coconut, islet on the New Guinea coast. 10° 04′ S., 143° 03′ E.

Cocos, island known to Wafer, Dampier and other early navigators, 4.5 m. NE-SW., very high. 5° 32′ 57″ N., 88° 02′ 10″ W. Northeast from the Galapagos.

Cocos, a name given in 1790 by Captain Wilkinson to the group discovered by Lemaire and Schouten, and by them called Marqueen.

Codfish, islet off the west coast of Stewart, New Zealand, 3 m. NW-SE., 2 m. wide.

Coffin, group of the Bonin islands. 26° 38′ N., 142° 15′ E.

Collis a name of Kamaka, an islet of Mangareva.

Columb, a coral islet, wooded and inhabited, in Astrolabe bay, New Guinea.

Colvocoressis, see Dravinni, Fiji.

Commerson, or Comerson, two low islands discovered by Bougainville in 1768. 0° 40′ S., 145° 17′ E.

Conflict, group of more than 22 islets in the Louisiade archipelago. 10° 46′ S., 151° 46′ E. Named for H. B. M. S. *Conflict* in 1880.

Connor, see Katai in the New Guinea region.

Constantin, see Greenwich of the Caroline group.

Contrariété, the old Spanish name of Ulava, Solomon islands.

Contrariété islet = Porondu, New Caledonia.

Conversion de San Pablo (La), supposed to be Britomart, of Duperrey. Discovered by Quirós February 10, 1606. See *Quirós Viajes*, *I.*, 256; *II.*, 7, 92.

Cook, islet at entrance to Christmas island lagoon. 1° 57′ 16″ N., 157° 27′ 45″ W.

Cook, see Tarawa, Gilbert islands.

Cook, islet on the northeast coast of Faté, New Hebrides.

Cook Islands, a portion of the Hervey group, often so-called.

Coquille, see Pikelot of the Caroline islands.

Cornwallis, another name for Johnston.

Coronados, see Annanurunga, Paumotu archipelago.

Cosissipe, island in the Hermit group. It abounds in pigeons.

Count Heiden = Likieb, Marshall group.

Coutance, a well-wooded islet of New Guinea, half a mile long and a quarter broad. 10° 13′ S., 148° 07′ E.

Covell, a name for Ebon, Marshall islands.

Crab, islet on the northwest coast of York peninsula, Australia. 10° 58′ S., 142° 56′ E.

Craven, a high island in the Hudson group, Fiji. 17° 39′ S., 177° 01′ 30″ E.

Credner, or Pigeon group, lies between Duke of York and New Britain; low and thickly wooded islands, each with a separate reef with deep water between. 4° 15′ S., 152° 19′ E.

Crescent, see Timoe, Paumotu archipelago. **22.**

Crétin, see Tami, east coast of New Guinea. 6° 45′ S., 147° 49′ E. Named for Lieutenant Crétin of the *Recherche*.

Croker, see Heraiki, Paumotu archipelago. **21.**

Crouy islet is in Dumbea passage, entrance to Noumea roadstead, New Caledonia.

Crown is 7 m. northwest from Long on the coast of New Guinea. It was discovered by Dampier; is 4–5 m. in circumference, and 2000 ft. high. 5° 08′ S., 146° 56′ E.

Culpepper is the most northerly of the Galapagos, very barren, 550 ft. high. 1° 39′ 30″ N., 92° 03′ W.

Cumberland, see Manuhangi, Paumotu archipelago.

Cumberland, an extensive group off the east coast of Queensland, Australia, reaching to 21° S.

Cumming, low islet of Fiji. 16° 21′ 40″ S., 179° 08′ 47″ E.

Cuop, islet of Ruk, Caroline islands.

Curé, a name of Ocean in the Hawaiian group.

Current, see Pulo Anna, Caroline islands.

Curtis, two rocks in the Kermadec group, 500 ft. high. Said to emit hot water and steam. 30° 36′ S., 179° 14′ W.

Cyclades (Les) of Bougainville = New Hebrides.

Cyprian Bridge, the easternmost island on the west side of Bougainville strait, Solomon group, 377 ft. high, dome-shaped.

Daddahai, or Brierly, in the Louisiade archipelago; about a mile in circuit, 380 ft. high, wooded and inhabited. 11° 18′ S., 153° 08′ E.

Dageraad = Aurora or Makatea of the Paumotus. Discovered by Roggewein in 1712.

Daiwari, or Gibbons, islet of Nuakata, Louisiade archipelago; 290 ft. high, clothed with grass, uninhabited.

Dalrymple, in Torres strait. 9° 37′ S., 143° 18′ E.

Dambach, a small cluster on the east coast of Bougainville, Solomon islands. 5° 41′ S., 155° 07′ E.

Dampier, or Karkar, is 6–7 m. northeast of Cape Croisilles on the coast of New Guinea; volcanic, and about 5000 ft. high, 36–40 m. in circumference. 4° 42′ S., 145° 58′ E. **10.**

Danger, see Pukapuka, Paumotu archipelago. **22.**

Danger group consists of three islands, Pukapuka, Motukoe and Motukavata on a reef 8 m. E-W. and 4 m. N-S. Discovered by Byron June 21, 1765. Lagoon closed, landing dangerous. 10° 53′ S., 165° 45′ 30″ W.

Danger, islands of New Guinea. 0° 15′ S., 135° 05′ E.

Dangerous Archipelago, a name of the Paumotu group.

Daniel, see Arno of the Marshall group.

Dao Balayet, a sand islet marking Estrées passage on the northwest coast of New Caledonia.

Daos islets form the south part of Belep group, New Caledonia. **13.**

Daomboni, islet on the north coast of New Caledonia.

Darnley, a name of Erub on the New Guinea coast.

Daru, or Yaru, at the mouth of the Oriomo (Tait) river, north of Bobo and between Bristow and the mainland. Fertile, fine timber, not many natives. 9° 05′ S., 143° 12′ E.

Dauan, islet off the west side of Saibai on the South coast of New Guinea. 9° 25′ S., 142° 32′ E.

Dauar, or Dowar, islet within the same reef with Mer and Waier of the Murray islands; Papuan inhabitants. 9° 54′ S., 144° 02′ E.

Daugaé, islet on the reef at the north extreme of New Caledonia.

Daugo, the highest of the Fishermen islands off Port Moresby on the south coast of of New Guinea. Natives numerous, dark copper color; they have large canoes with four mat sails. 9° 32′ S., 147° 04′ E.

Dauila, or Goodenough, of the D'Entrecasteaux group, is 21 m. NW-SE. A mountain range, of which the highest peak reaches 8500 ft., extends throughout. Well peopled and cultivated to some extent. 9° 31′ S., 150° 20′ E.

Daussy, islet in Arembo bay on the southwest side of New Caledonia.

Davis, a high island in the Yasawa group, Fiji. 17° 27′ 40″ S., 177° 00′ 30″ E.

Davis, see Rapanui or Easter.

Dawhaida, see Marokau of the Paumotu archipelago. **21.**

Dawson, largest of the Laseinie group in the Louisiade archipelago, 0.7 m. NW-SE., 450 ft. high, uninhabited.

Dawson, a very small reefed islet in the D'Entrecasteaux group. 10° 21′ S., 151° 25′ E.

Dawson, see Bikar, Marshall islands. **6.**

Day, one of the Tiri islets off Vanua levu, Fiji. 16° 24′ 14″ S., 179° 09′ 20″ E. Low coral.

Dayman, islet in Torres strait. 10° 45′ S., 142° 21′ E.

Dayrell, islet off the east coast of Raoul, Kermadec islands.

Deal, island of Kent group in Bass strait. 39° 30′ S., 147° 18′ E.

Deans is one of the names of Rahiroa, also called Vliegen and Nairsa, Paumotu archipelago.

Death, islet in St. Vincent bay on the southwest side of New Caledonia.

Deblois, islet of New Guinea. 3° 22′ S., 144° 09′ E.

Deboyne, group in the Louisiade archipelago is 6 m. from St. Aignan, a high (1500 ft.), wooded cluster, of which Panniet is the largest; Rara at the southeast extreme. Nivan, Panapompon, Nibub, Mabui, Redlick and Torlesse complete the list.

Deboyne, see Panniet of the Louisiade archipelago.

Debrun, islet near Noumea on the south side of New Caledonia.

Ducena = Maitea in the Espinosa chart. Discovered by Quirós February 12, 1606.

Deception = Moso, New Hebrides.

Deedes, two islets 0.7 m. apart in the Engineer group. 10° 32′ S., 151° 16′ E.

Deguala, one of the Pleiades group northwest of Uea, Loyalty group.

De Haven, a high island of the Ringgold group, Fiji. 16° 30′ 20″ S., 180° 21′ 30″ E.

Deirina, islet of New Guinea, 0.7×0.5 m., 280 ft. high, inhabited.

Dekatua, or Butchart, islet of the Engineer group, 350 ft. high, covered with coconut palms.

Delami = Roporopo in Orangerie bay, southeast coast of New Guinea.

Deliverance islet, a point in the north boundary of Queensland colony. 9° 34′ s., 141° 45′ E.

Denham, islet at west end of Kandavu, Fiji.

Deni is the native name of Nitendi or Santa Cruz in the New Hebrides, according to Codrington.

Dent, island in Northwest bay, Campbell island, New Zealand.

D'Entrecasteaux group was seen from a distance by the French navigator from whom it is named. Captain Moresby examined the islands in 1874. The group consists of Duau (Normanby), Moratau (Fergusson), Danila (Goodenough), Raputata Sanaroa (Welle), Dobu (Goulvain), all of them high and fine islands, well peopled. **9.**

D'Entrecasteaux, inhabited islet half a mile long in the Admiralty group. 1° 53′ s., 146° 30′ E.

De Peyster, see Nukufetau of the Ellice group. **16.**

D'Haussez, see Mercury, New Zealand.

Des Lacs, one of the French group, 1550 ft. high, inhabited. 4° 38′ s., 149° 33′ E. **10.**

Des Lanciers, a name given by Bougainville to Akiaki or Thrum Cap of the Paumotu islands.

Devarenne, islet in St. Vincent bay on the southwest side of New Caledonia.

Deverd, islet off Chasseloup bay on the northwest coast of New Caledonia.

Didigili, wooded islet, 150 ft. high, with fringing reef on the southeast coast of New Guinea.

Didot, islet in Muéo passage near Noumea, New Caledonia.

Didymus, see Ito, islet on the New Guinea coast.

Dieterici, a small group on the northeast coast of Bougainville, Solomon islands. 6° 08′ s., 155° 23′ E.

Digaragara, islet at west opening of the outer ring of Egum atoll in the Kiriwina group. 9° 22′ 30″ s., 151° 53′ E. **9.**

Dingen, small island in Dampier strait.

Dinner, see Samarai on the coast of New Guinea.

Direction = Manevai, Santa Cruz islands.

Direction, see Namena, Fiji.

Disappointment islands (of Byron), in the Paumotu archipelago, were discovered by Byron June 17, 1765. 14° 09′ s., 141° 14′ W. Consist of atoll Napuka or Whytoohee and Tepoto or Otooho. **21.**

Disappointment, off the west coast of the Auckland islands, New Zealand.

Disappointment, one of the Taumaco group.

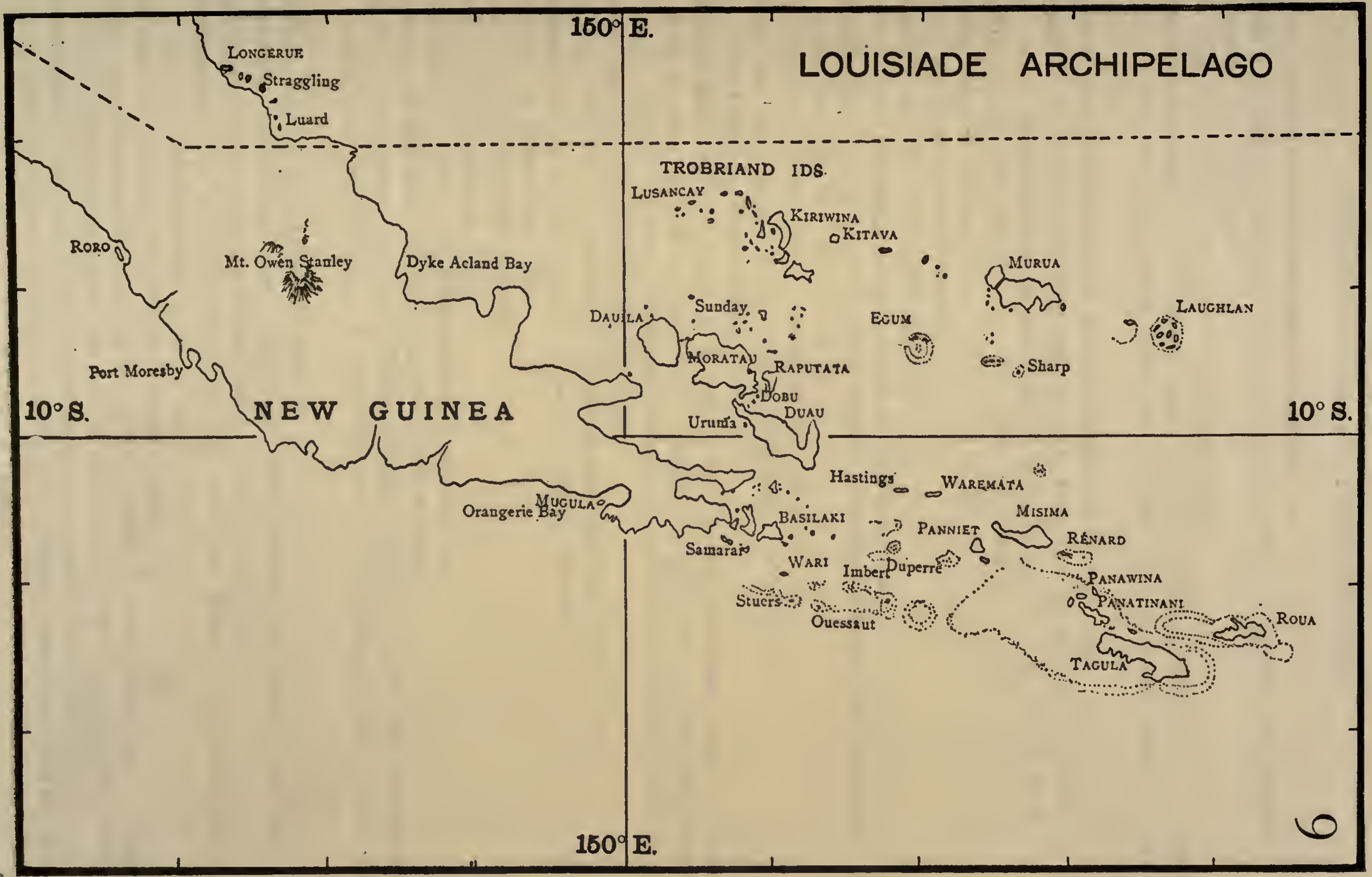
Disappointment, is the largest of the Duff group, 1200 ft. high. Natives are Polynesian, number about 350, thin and ugly, armed with bows and poisoned arrows.

Disappointment, see Rosario of the Bonin islands.

Dobu, or Goulvain, is at the entrance to Dawson strait in the D'Entrecasteaux group, 2 m. N-S., 2.2 m. E-W.; inhabited by Papuans. 9° 46′ s., 150° 52′ E. **9.**

Dodogessa, islet off Danila in the D'Entrecasteaux group.

Dog, see Nonuti of the Gilbert group.


LOUISIADE ARCHIPELAGO
150° E.
10° S.
LONGERUE
Straggling
Luard
RORO
Mt. Owen Stanley
Dyke Acland Bay
Port Moresby
NEW GUINEA
TROBRIAND IDS.
LUSANCAY
KIRIWINA
KITAVA
MURUA
LAUGHLAN
DAUILA
Sunday
EGUM
MORATAU
RAPUTATA
Sharp
DOBU
DUAU
Uruma
Hastings
WAREMATA
MISIMA
Orangerie Bay
MUGULA
BASILAKI
PANNIET
RÉNARD
Samarai
WARI
Imbert
Duperre
PANAWINA
PANATINANI
Stuers
Ouessaut
ROUA
TAGULA
150° E.
9

Dog, see Pukapuka of the Paumotu archipelago.

Dogigi and Rikarika compose the Lebrun group of the Louisiade archipelago. The former is 165 ft. high.

Doi, or Konaoe is one of the Ono i lau group, Fiji.

Doini, the Blanchard of D'Entrecasteaux on the southeast coast of New Guinea, is 2 m. ENE-WSW., half a mile wide, 510 ft. high, and well cultivated. 10° 42′ S., 150° 40′ E.

Dominica, the Spanish name of Hivaoa, Marquesas islands. **23.**

Dongaloa, a group of low islets off Viti levu, Fiji. 17° 24′ S., 177° 39′ 30″ E.

Dot, islet in Huon gulf on the east coast of New Guinea. 7° 05′ S., 147° 08′ E.

Double, on the Australian coast. 16° 44′ S., 145° 44′ E.

Double, islet in Torres strait. 10° 27′ S., 142° 25′ E.

Double, see Nemu, New Caledonia.

Doubtful, an islet of Beaupré, Loyalty group.

Doubtful, see Tekokoto, of the Paumotu archipelago. **21.**

Dougherty, seen by Captain Dougherty in 1841 from whaler *James Stewart.* Seen again in 1859. 59° 21′ S., 119° 07′ W.

Dove, islet in Torres strait., 10° 04′ S., 142° 57′ E.

Dover, two islets on the south coast of Admiralty. 2° 16′ S., 147° 13′ E.

Dowar, see Dauar in Torres strait.

Dowsett Reef is 13 m. south from Malo reef in the Hawaiian group. It extends 8 m. × 4 m. 25° 13′ N., 170° 38′ W. On July 4, 1872, the whaling brig *Kamehameha*, Captain Dowsett, struck on this reef which is awash in some parts.

Dowsett, see Bikini of the Marshall group.

Drala, see Ndrala, Fiji; islet 80 ft. high, off the east coast of Viti levu.

Dramai, islet on the New Guinea coast. 4° 06′ S., 134° 10′ E.

Draviuni, see Ndraviuni, Fiji.

Druadrua, see Ndruandrua, Fiji.

Druau, see Ndruandrua, Fiji.

Drummond, a name of Tapituea of the Gilbert islands.

Du ami and **Du ana,** islets in Kutu bay, Isle of Pines.

Duau, or Normanby, of the D'Entrecasteaux group, is 39 m. long, mountainous, rising to an height of 3374 ft., and inhabited. The southeast cape is in 10° 10′ S., 151° 14′ E.

Dublon, islet of Ruk, Caroline islands. 7° 22′ 15″ N., 151° 55′ 22″ E.

Dubouzet, or Nu islet, bears a lighthouse at the entrance to Noumea, New Caledonia.

Dubuaru, islet on the New Guinea coast. 9° 08′ S., 142° 58′ E.

Duchateau, three low, wooded islets, Pana bobai ana, Pana rurawara; and Kukulub, of the Louisiade archipelago. 11° 16′ S., 152° 22′ E.

Duchess, see Uruma of the D'Entrecasteaux group. **9.**

Ducie was discovered by Captain Edwards in H. M. S. *Pandora* in 1791. A low, uninhabited lagoon island 1.7 m. NE-SW., and 1 m. wide in 24° 40′ S., 124° 48′ W.

Ducos, islet in St. Vincent bay on the southwest coast of New Caledonia.

Dudemaine, islet on the north coast of New Guinea, 100–200 ft. high. 3° 08′ S., 142° 20′ E.

Dufaure, on the north side of New Britain, is 7 m. long. 5° 06′ S., 150° 14′ E.

Dufaure, see Mugula on the southeast coast of New Guinea. **9.**

Duff, group in the Santa Cruz islands, was discovered by Quirós and Torres in 1606, and again by Captain Wilson, in the *Duff*, September 25, 1797. Consists of ten small islands extending SE-NW. 17 m. Inhabitants largely Polynesian. British protectorate declared October 1, 1898. 9° 48′ S., 167° 10′ E.⊙ **12.**

Dugong, islet on the New Guinea coast. 10° 31′ S., 143° 03′ E.

Dugumenu, a low, coral island 0.5 m. in diameter, of the Trobriand group.

Duipoi, islet of Mahabarina, of the Killerton group, off the north shore of Milne bay, New Guinea.

Duke of Clarence, see Nukunono of the Union group. **17.**

Duke of Gloucester, a group of three atolls named by Carteret in 1767. Nukutapipi or Margaret, Anuanurunga, Coronados or Four Crowns, and Anuanuraro or Archangel, in the Paumotu archipelago. **21.**

Duke of York, a group of 13 islets, of which this is the largest, Bismarck archipelago, between New Britain and New Ireland. It is 5 m. E-W., 3.5 m. N-S. Makada and Uluare are the only others of any size, but all except Ulu are inhabited by cannibals. 4° 09′ S., 152° 28′ E. **10.**

Duke of York, see Atafu or Oatafu of the Union group. **17.**

Duke of York, see Moorea, Society islands. Name given by Wallis July 27, 1767. **20.**

Dumoulin, group of four islets and two detached rocks, Baiiri, Ana karukarua, Ana badi badila, Uarama kiukiu. The first is 365 ft. high and inhabited. 10° 55′ S., 150° 43′ E.

Dumplings, a group of three islets from 180–250 ft. high on the northeast coast of New Guinea.

Duncan, a group of islets in Torres strait. 10° 16′ S., 142° 06′ E.

Duncan, of the Galapagos.

Dundas, on the northeast coast of Auckland islands, New Zealand.

Dundas, see Apamama, Gilbert islands. **7.**

Dungeness, islet on the south coast of New Guinea near Tut. 9° 51′ S., 142° 55′ E.

Dunk, islet of the Australian coast. 17° 58′ S., 146° 11′ E.

Dunkin, see Nukuor, Caroline archipelago. **4.**

Duperré, a group of five wooded islets on a reef in the Louisiade archipelago. 11° 12′ S., 152° E.

Duperrey, a low, wooded, inhabited island in Humboldt bay on the north coast of New Guinea.

Duperrey, see Aura, an islet of Mokil, Caroline islands. This name is applied to Mokil, also.

Duportail, a group on the north side of New Britain, 5 m. by 2.7 m. There is an active volcano near the southwest end. 4° 55′ S., 151° 21′ E. Named for Lieutenant Duportail of the *Espérance*. **10.**

Duroc, islet in Alcmené passage, Isle of Pines.

Durour, a flat islet on the coast of New Guinea, discovered by Carteret September 19, 1767. 1° 33′ S., 143° 11′ E.

D'Urville, in west end of Cook strait, New Zealand.

D'Urville, see Kairu, New Guinea.

D'Urville, see Nama islet of Losap, Caroline islands. **4.**

Dyar, islet on the New Guinea coast. 1° 37′ S., 131° 45′ E.

Eap, an old spelling of Yap, Caroline islands.

Ear, islet of Uluthi, Caroline islands.

Earl Dalhousie shoal, Caroline islands. 8° N., 145° 09′ E.

Earle = Pana krusima of the Louisiade archipelago.

East Faiu or Lütke, a low coral island 0.7 m. long, with fringing reef, uninhabited. Caroline islands. 8° 33′ N., 151° 26′ E.

East, see Waremata of the Louisiade archipelago.

East, a group of four islets off the north coast of New Hanover, the easternmost being the largest.

East, islet 60 ft. high off Florida, Solomon islands.

East, islet off Kandavu, Fiji; rocky, 69 ft. high.

East, islet of Wari or Teste, New Guinea, 100 ft. high.

Easter, see Rapanui.

Eastern, islet of Midway islands, Hawaiian group, 1.2 m. long, 6–15 ft. high, covered with coarse grass and small shrubs; sand dazzling. 28° 12′ 22″ N., 177° 22′ W.

Ebadon, islet of Kwadjalin, Marshall islands. 9° 22′ N., 166° 53′ E.

Ebon, called also Boston and Covel, of the Marshall group, consists of 21 well wooded islets on a reef 25 m. in circumference. Discovered May 25, 1824, by Captain Ray, an American. 4° 48′ N., 168° 45′ W. The islets of importance are called Jurijer, Enijarmek, Ebon, Dereg, Enijadok, Guamagnamlap, Euer, Munjak, Taka, Enilo, Jio, Met. Ebon islet forms the south and southeast side of the atoll; 5 m. long; is the largest and most important of the group. American mission station. **6.**

Ebuma, islet 80 ft. high, near Samarai on the southeast coast of New Guinea.

Eddystone, see Panarora of the Louisiade archipelago. It is 540 ft. high and inhabited.

Eddystone, see Narovo, Solomon islands. **11.**

Edgecombe, see Tupua, of the Santa Cruz group.

Edigen, islet of Kwadjelin, Marshall group.

Efáte = Faté or Vaté or Sandwich, of the New Hebrides.

Egerup, see Erikub of the Marshall islands. **6.**

Egg, see Nui of the Ellice group. **18.**

Egg, see Lehua, Hawaiian group.

Egmont, see Vairaatea, Paumotu archipelago. **22.**

Egmont of Carteret is Santa Cruz, or Deni (Nitendi).

Egum, atoll in the Trobriand group, is 13 m. in diameter, the encircling reef opening only on the NW. and NE., having six islets on the north portion, Degargara, Yanaba, Wiakou, Napasa, Tabunagora, Nagian; while in the centre of the lagoon are Fandaio, Simlakita, Kadais Mua and Egum in one group to the north, and Nasakor consisting of four islets to the south. 9° 26′ S., 151° 58′ E. **9.**

Ehiki, islet of Panasia, Louisiade archipelago.

Eiao, called also Masse, Knox, Hiaou, of the Marquesas group, is 6 m. NE-SW., 2000 ft. high, well wooded, but uninhabited. 8° 02′ S., 140° 41′ W. **23.**

Eil, Malk or Irakong, of the Pelew islands, is rocky and well-wooded. 10° 11′ 30″ N., 134° 27′ 30″ E.

Eimeo, see Moorea, Society islands. **20.**

Einmlap, islet of Udjelong, Marshall islands.

Eirek, islet of Wotto, Marshall islands.

Ejeet, islet in Majuro lagoon, 9.5 m. from from the entrance, Marshall islands.

Ekolo, islet of Ontong Java. 5° 38′ S., 159° 34′ E. **11.**

Elato, or Haweis, Caroline group, consists of the islets Falifi, Toass, Namoliaur. 7° 30′ N., 146° 24′ E.

Eld, a small, high island near Naviti, Yasawa group, Fiji. Of triangular form, 1 m. long. The north point is in 17° 09′ 40″ S., 177° 10′ 10″ E. Named for Henry Eld of the United States Exploring Expedition.

Elephant, islet of Espiritu Santo, New-Hebrides.

Elisabeth, one of the Admiralty group; a low coral island 1.2 m. N-S, by 0.2 m. wide; inhabited. 2° 55′ S., 147° 03′ E.

Elisabeth, near Mbenga, Fiji.

Elisabeth, see Henderson of the Paumotu archipelago.

Elisabeth, see Toau of the Paumotu archipelago.

Elisabeth, see Manoba of the Solomon islands.

Eliza, see Tepoto of the Paumotu archipelago.

Eliza, see Onoatoa of the Gilbert group.

Eliza, see Peru of the Gilbert group.

Ella, islet of Ifalik, Caroline islands.

Ellice group. Consists of nine low atolls of which eight are inhabited; extends NW. by N.–SE. by S. about 360 m.; peopled from Samoa, except Nui whose inhabitants came from the Gilbert islands. Visited by Maurelle in 1781, and by Captain de Peyster in 1819. The atolls are Nurakita or Sophia, Nukulaelae or Mitchell, Fangawa, Funafuti or Ellice, Funafana, Nukufetau or De Peyster, Vaitupu or Tracy, Nui or Netherland or Egg, Niutao or Speiden or Lynx, Navomana or Hudson, and Nanomea or St. Augustine. **16.**

Ellice, see Funafuti.

Elliott, island of Fiji, named for the Chaplain of Wilkes' ship. 18° 51′ S., 178° 24′ E.

Elmore, islet of Odia atoll, Marshall group.

Elson is the same as Aukena of Mangareva.

Emery, or Wea of the Atana group, northwest from Rotuma; 700 ft. high.

Emmons, islet of the Hudson group, Fiji. 17° 38′ 20″ S., 177° 06′ E. A high islet named for Lieut. Geo. F. Emmons of the Wilkes Expedition.

Encarnacion of Quirós (1606) was placed in about 24° 50′ S., 137° 42′ W., but there is no land near that position. As Quirós estimated the distance from the American coast at 1500 *leguas* it would be difficult to identify his island, which he describes as nearly level with the water.

Enderbury, a guano island of the Phœnix group, 3 m. by 2.5 m., and 23 ft. high. The north point is in 3° 06′ 35″ S., 171° 14′ 25″ W. **17.**

Enderby, islet on the northeast coast of Auckland island, New Zealand.

Enderby, one of the Tamatam or Los Martires group in the Carolines, discovered by Ibargoitia in 1799. It consists of Alet and Poloat with a fringing reef 5.5 m. E-W. and 3 m. N-S. 7° 19′ 25″ N., 149° 15′ E. **4.**

Enear, islet of Ebon, Marshall islands.

Engebi, islet on the north side of Eniwetok, Marshall islands.

Engineer, see Tubutubu, New Guinea.

Engineer group, in 10° 37′ S., 151° 16′ E., consists of four islands, Berri berrije or Slade, Nara nara wai or Skelton, Kuriva or Watts, and Dekatua or Butchart. **9.**

Engnoch, islet of Yap, Caroline islands.

Eniwetok, or Brown of the Marshall group, was discovered by Captain Thomas Butler, December 13, 1794. Consists of 30 islets on a reef 29 m. in diameter. The north point is in 11° 40′ N., 162° 15′ E. **6.**

Enkaba, islet of Fiji, 2 m. by 1 m., well wooded, and inhabited. The north end is in 18° 50′ S., 181° 06′ 30″ E.

Entrance, islet east of Prince of Wales in Torres strait. 10° 42′ S., 142° 17′ E.

Entrance, at the mouth of Aird river, New Guinea.

Entrance, islet in the Louisiade archipelago.

Entry, see Kapiti, New Zealand.

Enybarbar, islet of Rongelab, Marshall islands.

Enyebing, islet of Ailinglap, Marshall islands.

Enylamiej, north islet of Udjae; one of the finest in the Marshall islands. 9° 21′ N., 165° 36′ E.

Enyvertok, islet of Rongelab, Marshall islands. 11° 16′ N., 167° 43′ E.

Eo, another name for Beaupré, Loyalty group. **13.**

Eori, an uninhabited islet of the Mamanutha ira group, Fiji.

Epi, see Api of the New Hebrides.

Epoko, the westernmost islet of the Rénard group, Louisiade archipelago.

Eraniau, at the entrance to Erakor lagoon, Faté or Sandwich island, New Hebrides. Headquarters of the Presbyterian mission.

Erikub, or Bishop Junction or Egerup, is an uninhabited island of the Marshall islands, 25 m. by 6–11 m. The southeast point is in 9° 06′ N., 170° 04′ E., according to Kotzebue.

Eromanga, a high and rocky island of the New Hebrides, 30 m. by 32 m. Five missionaries have been murdered here. **12.**

Erradika, or Hat islet at the entrance to Havannah harbor in Faté, New Hebrides, contains a coral mound 345 ft. high rising from a low island.

Erronan, see Futuna, New Hebrides.

Eru, islet of Kwadjelin, Marshall group.

Erub, or Darnley in Torres strait, is a volcanic island 5 m. in circumference and 610 ft. high. 9° 35′ 20″ S., 143° 45′ E.

Eruption, see Misima in the Louisiade archipelago.

Eschscholtz, a name given to Bikini by Kotzebue in honor of Johann D. Eschscholtz, who was naturalist on both of Kotzebue's expeditions. **5.**

Espiritu Santo, New Hebrides, called Australia del Espiritu Santo by Quirós in April, 1606, and by the settlers and traders plain Santo, Marina of the natives, is a high volcanic island 75×40 m. in extent, and 4000 ft. high. Inhabitants were, and to some extent still are cannibals. The southwest point is in 15° 38′ 08″ S., 166° 46′ 30″ E.

Estancèlin, see Maturei Vavao in the Actæon group, Paumotu archipelago.

Etal, of the Carolines, is 12 m. in circumference and has some 400 inhabitants. Fine breadfruit trees here are said to measure 60 ft. to the first limb. 5° 35′ N., 153° 43′ E. **5.**

Ethel, islet at the head of Port Moresby, south coast of New Guinea.

Eua, of the Tongan group, was discovered by Tasman in January, 1643, who called it Middleburg. It is 10 m. southeast from Tongatabu, is 30 m. in circumference, and 1078 ft. high. 21° 20′ 30″ S., 175° 02′ W. About 300 inhabitants. **18.**

Euaiga, see Euaiki of the Tongan group.

Euaiki, islet of Tongatabu, much higher than the others. 21° 07′ 30″ S., 174° 55′ W. **18.**

Eugéne, islet on the southwest coast of Ysabel, Solomon islands. 8° 17′ S., 159° 11′ E. **11.**

Eugenie, islet in Cloudy bay on the coast of New Guinea.

Eunauro (Euna), or Cette, is on the southeast coast of New Guinea. 10° 25′ S., 149° 26′ E. Rocky, thickly inhabited by savages who have large canoes and fight chiefly with spears.

Eurupig or Kama, Caroline archipelago, consists of two islets on a reef 2.5 m. long. Population, 50. 6° 40′ N., 143° 10′ E. **3.**

Evans, of the Louisiade archipelago, was discovered in 1841. 9° 10′ S., 151° 55′ E.

Evans, islet of Sugar-loaf, is in Cook strait, New Zealand.

Ewing, islet on the northeast coast of Auckland islands, New Zealand.

Ewose, near Tonga in the New Hebrides, is 1.2 m. NW-SE., and 1076 ft. high. About 30 inhabitants.

Exchequer, see L'Echiquier. **8.**

Exploring islands, a name given by Wilkes in 1840 to an important group in Fiji enclosed by a reef 77 m. in circumference, which has a sloping edge to windward. The islets are Munia, Malatta, Osubu, Vanua mbalavu, Avia, and Susui.

Eyo, islet in Makira harbor of San Cristóval, Solomon islands.

Faaite, or Miloradowitch of the Paumotu islands, was discovered by Bellingshausen in 1819. It is 15 m. long and 5 m. wide. The west end is in 16° 43′ S., 145° 19′ 30″ W. **21.**

Fabre, a guano island of the Huon group.

Faed, see Abgarris of the Bismarck archipelago.

Fafa, islet of Tongatabu, Tongan islands. 21° 05′ S., 175° 08′ W. **18.**

Faiava or Wasau islet of Uea, Loyalty group.

Faioa, islet of Uvea or Wallis. It is covered with coconuts.

Fais, see Feys, Caroline archipelago.

Faitruk, a group in the west part of Ruk lagoon, Caroline islands. Consists of Tol, Fanup, Fanupenges, Remalum, Oni, Utet, Jawt, etc. Population not less than 8000; fierce, untamed heathen.

Faiu (east) or Lütke, of the Caroline islands, was discovered by Lütke, and is a low coral island 0.7 m. long; uninhabited. 8° 33′ 20″ N., 151° 26′ E. **4.**

Faiu (west), low, wooded, coral islet, 300 yards in diameter and uninhabited. 8° 03′ N., 146° 50′ E. **3.**

Fagnin, see Howland.

Fakaafo or Bowditch, in the Union group, was discovered by Captain Hudson of the United States Exploring Expedition. A British protectorate was proclaimed June 20, 1889. A triangular coral island 8 m. N-S., 4 m. E-W.; population about 250. South point is in 9° 26′ 40″ S., 171° 03′ 15″ W. Sixty-two islets. Also written Fakaofu. **16.**

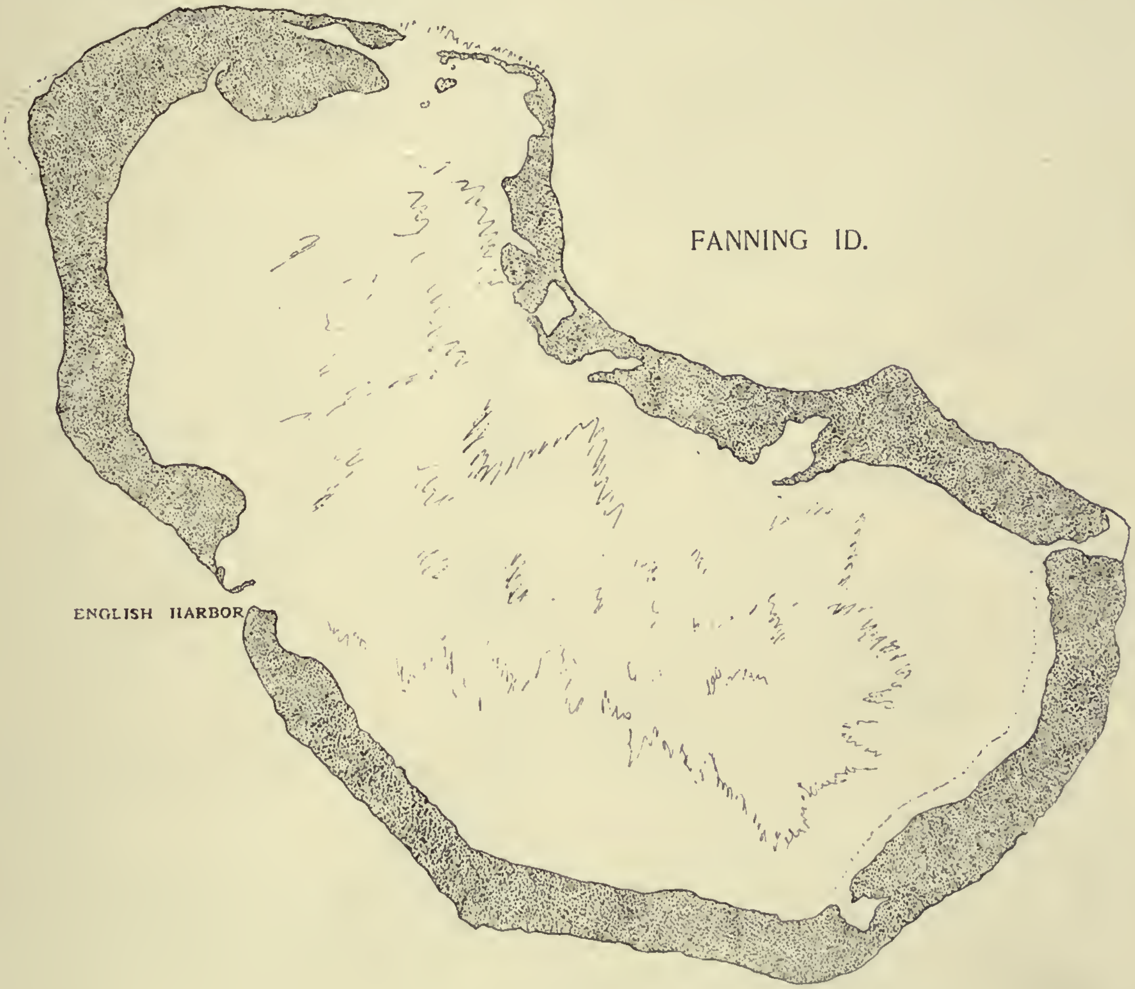


FIG. 4.

Fakaina, see Akahaina of the Paumotu archipelago.

Fakarawa, or Wittgenstein, was discovered by Bellingshausen in 1829. A lagoon atoll 32 m. by 10 m. Station of the French Resident for the Paumotu archipelago. Northeast point is in 16° 05′ S., 145° 33′ W.

Falalep, islet of Uluthi of the Caroline archipelago.

Falalis, islet of Wolea, of the Caroline archipelago. Population, 600 (Gulick).

Falang, islet of Ruk, Caroline islands. 7° 21′ 22″ N., 151′ 52′ 57″ E.

Falcon, Tongan group. 20° 21′ S., 175° 23′ W. First seen as a breaking reef from H. M. S. *Falcon* in 1885. An eruption of that year left it 2 m. long and 250 ft.

high, according to a survey in 1889. Ten years later Captain Field, in H. M. S. *Penguin*, found nothing but a breaking shoal.

Faleü, islet of Ruk, Caroline islands.

Falevai, islet in the Tongan group.

Falifi, islet of Elato, Caroline islands.

Fallafagea, a form of Kelifijia in the Tongan group.

False, islet on the northeast coast of New Guinea, near Huon gulf.

False, see Thikombia, Fiji.

Falulap, islet of Wolea, Caroline archipelago.

Fanadik, central islet of Tamatam or Los Martires, Caroline archipelago.

Fananu, islet of Namolipiafane, Caroline islands.

Fandaio, islet in the lagoon of Egum, atoll of the Kiriwina group. 9° 25′ S., 151° 57′ E.

Fangataufa, see Ahunii, Paumotu archipelago.

Fangawa, westernmost islet of Nukulaelae, Ellice group. 9° 22′ S., 179° 50′ E. **16.**

Fanning was discovered in 1798 by Captain Edmund Fanning, an American, in the ship *Betsy*. Annexed by England March 15, 1888; 9.5 m. NW-SE., 27 m. in circumference; very fertile; English harbor on the west side is within an opening to the lagoon, and the principal houses are south of this. 3° 51′ 25″ N., 159° 22′ W.

Fanuatapu, high, rocky islet, east coast of Upolu, Samoan islands.

Fanuatapu, inhabited islet on the southwest side of Nui, Paumotu archipelago.

Fanup, islet of Ruk lagoon, Caroline archipelago.

Fanupenges, islet of Ruk lagoon, Caroline archipelago, 3 m. east from Tol.

Faore is the second in size of the Stewart islands at the northwest end of the reef.

Fapula, islet on the east coast of Ysabel, Solomon islands. 8° 19′ S., 159° 42′ E. **11.**

Fara, islet on the east coast of Ysabel, Solomon islands. 8° 09′ S., 159° 35′ E. **11.**

Faraguet, a low, wooded islet of Sans Souci group, New Guinea. 3° 08′ S., 142° 24′ E.

Farailes, islet of Wolea, Caroline archipelago.

Farallon de Medinilla or Bird Island, of the Marianas. Volcanic, 2 m. NE-SW., 50 ft. high. 16° 30′ N., 146′ E. See map of Marianas under that name. Farallon is the common Spanish term for an isolated high rock.

Farallon de Pájaros, in the Marianas, is an active volcano 1039 ft. high; in eruption in 1877. Discovered by Douglas Sept. 12, 1789; 1.2 m. in diameter. 20° 36′ N., 144° 55′ E.

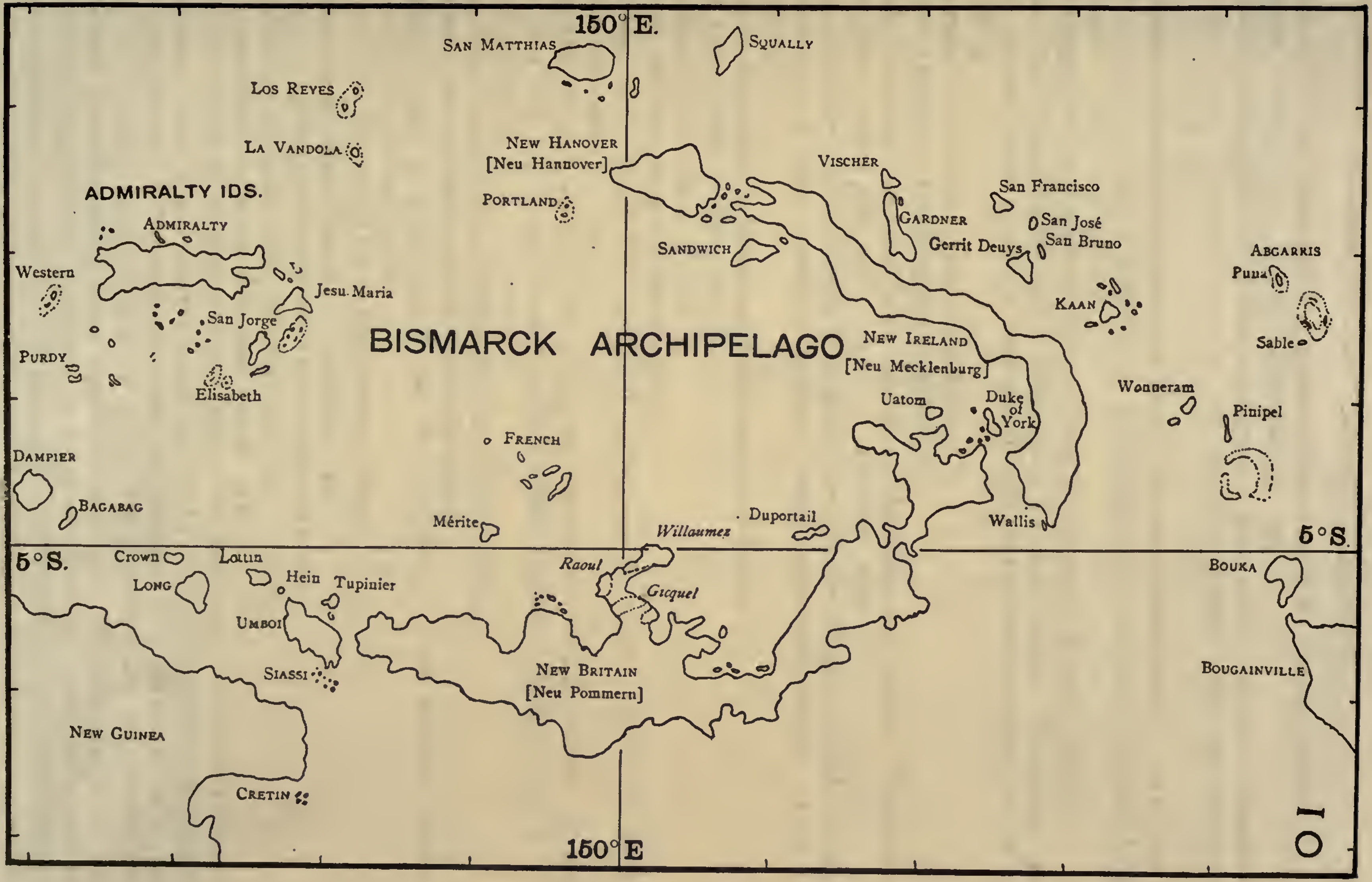
Farallon de Torres, in the Marianas. Formerly pinnacled rocks, but now reduced by the action of the waves or volcanic forces to rocks awash. Named for a former governor of Guam. 16° 51′ N., 145° 50′ E.

Fararik, islet of Ifalik, Caroline islands. **3.**

Faraulep or Gardner, of the Caroline islands, was discovered by Lütke, March 28, 1818. There are three islets on a reef 4 m. in circumference. 8° 36′ N., 144° 36′ E.

Fatáka, or Mitre, was discovered by Captain Edwards, in 1791, while searching for the mutineers of the *Bounty*. It is uninhabited; 2 m. NW-SE. A British protectorate was proclaimed October 1, 1898. 11° 55′ S., 170° 10′ E. **12.**

Faté, the correct form of Vaté or Sandwich, as v does not occur in the alphabet of that island. Also called Efaté and Efat. Is considered the finest island of the New Hebrides; 20 m. E-W. 17° 40′ S., 168° 20′ E. The natives have more Polynesian blood than their neighbors, and there are many Samoan words in their language. **12.**


10
150° E.
150° E
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5° S.
BISMARCK ARCHIPELAGO
ADMIRALTY IDS.
ADMIRALTY
Western
PURDY
Jesu Maria
San Jorge
Elisabeth
LOS REYES
LA VANDOLA
SAN MATTHIAS
NEW HANOVER
[Neu Hannover]
PORTLAND
SQUALLY
SANDWICH
VISCHER
GARDNER
Gerrit Deuys
San Francisco
San José
San Bruno
KAAN
ABGARRIS
Puna
Sable
Wonneram
Pinipel
NEW IRELAND
[Neu Mecklenburg]
Uatom
Duke of York
Wallis
Duportail
Willaumez
Raoul
Gicquel
FRENCH
Mérite
DAMPIER
BAGABAG
Crown
LONG
Lottin
Hein
Tupinier
UMBOI
SIASSI
NEW BRITAIN
[Neu Pommern]
NEW GUINEA
CRETIN
BOUKA
BOUGAINVILLE

Fatuba, one of the Pleiades group, northwest from Uea of the Loyalty islands.

Fatufatu, a rocky islet of Tahaa, Society islands. **20.**

Fatuhiva or Magdalena of the Marquesas group. Discovered by Alvaro de Mendaña, July 21, 1595. It is 8 m. N-S., 4 m. E-W., and 3675 ft. high. The west end is in 10° 24′ S., 138° 40′ W.

Fatuhuku or Hood of the Marquesas group. An uninhabited island, 1180 ft. high; discovered in 1774 by one of Cook's midshipmen who afterwards became Lord Hood. 9° 26′ S., 138° 56′ W.

Fatumanga, the southwesternmost islet of the Vavau group, Tongan islands.

Fauna, islet in the northeast part of Ruk lagoon, Caroline islands. Population, 150.

Fauro, volcanic island 11 m. N-S., and 1925 ft. high, in the Solomon group. 6° 56′ S., 156° 04′ E.

Fawsawn, islet of Ruk, Caroline archipelago.

Fead, see Abgarris in the Bismarck archipelago.

Fedarb, a group of three thickly wooded islets in the Admiralty islands. The eastern one has a conical peak 250 ft. high. 2° 22′ S., 147° 26′ E.

Fearn, or Hunter, was discovered by Captain Fearn in the *Hunter* in 1798. It is a volcano 974 ft. high, wooded on the slopes; sulphurous vapors escape. 22° 24′ S., 172° 05′ E.

Federal, or Ingraham, is Nukuhiva of the Marquesas islands.

Fefau, islet of Ruk, Caroline islands.

Fenuafu, islet of Uvea or Wallis.

Fenua iti, see Takutea of the Hervey group.

Fenualoa, of the Santa Cruz group, is 4.5 m. N-S. by 0.7 m.; 100–200 ft. high. Extensive reefs.

Fenua ura, or Scilly of the Society group, was discovered by Wallis in 1767. It is a circular reef 6–7 m. in diameter with a closed lagoon; inhabited. 16° 31′ S., 154° 43′ W.

Fenua ino, a wooded islet of Tahiti opposite Tomotai valley.

Ferguson, islet in Shallow bay of Admiralty island.

Ferguson, island in Marau sound east of Guadalcanar of the Solomon islands. 9° 50′ 30″ S., 160° 48′ 45″ E.

Fergusson, see Moratau of the D'Entrecasteaux group.

Ferneaux, see Marutea, Paumotu archipelago. **22.**

Fetohougo, a spelling of Fatuhuku of the Marquesas group.

Fetouhouhou, see Hatutu of the Marquesas group.

Fetuku, see Fatuhuku of the Marquesas group. **23.**

Feys, or Tromelin of the Caroline archipelago, was discovered by Captain Tromelin in 1828. 2.6 m. in circumference and 30 ft. high; of coral rock, but has no lagoon or fringing reef. When discovered had 300 inhabitants. 9° 46′ N., 140° 35′ E. **3.**

Fiji or Viti. An important group of the central Pacific comprising 155 islands, 100 of which are inhabited, as many more islets and reefs. The total area is not less than 7500 square miles, extending in longitude from 175° E. to 177° W., and in latitude from 15° S. to 22° S. The formation is both coral and volcanic, although there are no active volcanoes. Coral formations may be studied here to great advantage. The highest peak rises to a height of 5000 ft. In 1889 the population, including Rotuma, was 124,010, of which 122,012 were native Fijians. These are a fine race, all nominally Christian, although within the memory of man, cannibals. The language is a branch of the same stock whence the Polynesian languages have been derived, and is not difficult to acquire by English-speaking people. As the consonants have a different pronunciation from that of the English language the printed page seems far more remote from the Polynesian dialects than it really is. The names of islands, for example, spelled in the form adopted by the missionaries are quite different from the colloquial. The pronunciation is as follows: b = mb, c = th, d = nd, g = ng, q = nq or ngg, p = v, vu = b. The vowels nearly as in Italian. Dialects occur in several parts of the group, but not at all to the extent found in the islands of the western Pacific. The group was discovered by Tasman February 6, 1643, and by him named Prince William Islands. D'Urville made the first chart of the group, and in 1840 Wilkes spent six months surveying the entire archipelago. In 1875 (September 1) Fiji was formally proclaimed a British colony. Thakombau, like Kamehameha on Hawaii, brought some order out of the devastating civil wars between petty chiefs, and during the last years of his life his supremacy was fully recognized by all the other chiefs. After the annexation the seat of the colonial government was at Levuka on Ovalau, but since 1882 this has been transferred to Suva on Viti levu. The foreign government seems wisely administered and is acceptable to the natives. In February and March the rainfall reaches its maximum. During the hot months, from December to April, cyclones often of great severity occur. The temperature in the shade during the hot season ranges from 66° to 88°. From April to November, the fine weather season, the average daily temperature in the shade is about 78°. In 1876 the rainfall for the year at Levuka was 108.05 inches; rain fell on 162 days, the greatest fall for one day being 5.6 inches. Products of the group are copra, sugar, cotton, fruit, peanuts, fibre and pearl shell. Fiji is the form of the name in the windward portion of the group, Viti in the leeward. Among the best books to be consulted for information on Fiji are *Narrative of the United States Exploring Expedition 1838–1842*, by Wilkes; *Fiji and the Fijians, 1858*, by Rev. Thomas Williams; *A Mission to Viti*, by B. Seemann; *King and People of Fiji*, by Waterhouse.

Fila, a raised coral and wooded islet on the southwest side of Faté, New Hebrides.

Firth, apparently a misprint for Frith. See Ilamu of the D'Entrecasteaux group.

Fischel, islet in Astrolabe bay on the north coast of New Guinea.

Fischer, see Visschers of the Bismarck archipelago.

Fishermen, a low, sandy group off the coast of Motu, surrounded by reef. So named because the canoe which came off to the *Bramble* had long seines fitted like English nets. Natives of a dark copper color and numerous. 9° 30′ S., 147° 02′ E.

Fitz, island 100 ft. high off the coast of New Britain. 4° 52′ S., 150° 31′ E.

Fitzroy, island off Cape Grafton, Australia. 16° 56′ S., 146° 02′ E.

Flat, islet of the Haszard group, New Guinea.

Flat, see Hemenahai of the Louisiade archipelago.

Flat, islet on the south coast of Huapu of the Marquesas islands.

Fliegen, on the New Guinea coast. 7° 20′ S., 147° 23′ E.

Flinders, or Great, on the north side of Banks strait, 2550 ft. high.

Flinders, group on the Australian coast. 14° 11′ S., 144° 17′ E. Named for Captain Matthew Flinders.

Flint, a low, guano, uninhabited island belonging to Great Britain. It was discovered in 1801. 2.5 m. long, and 0.5 m. wide. 11° 25′ 43″ S., 151° 48′ W.⊙

Florida, one of the Solomon group. The name was given by the discoverer, Mendaña. The native name is said to be Ngela, but others declare this is only the name of a district. It is 1500 ft. high and populous. There are several stations of the Melanesian mission on the coast. 9° 02′ S., 160° 20′ E.

Fly, islet on the northeast coast of Faté, New Hebrides; low, covered with trees.

Fly, two islets off Death Adder bay on the northeast coast of New Guinea.

Folger, one of the Magellan islands whose existence is doubtful.

Follenius, islet on the north coast of New Guinea.

Fonuafala, see Fakaafo. 9° 22′ S., 171° 17′ W.

Fonualei, Amargura or Gardner of the Tongan group, in 18° 02′ S., 174° 24′ W., was destroyed by an eruption in August, 1847. Ashes were thrown in large quantities on passing ships 500–600 m. to the northeast.

Fonualoa, see Fakaafo. 9° 27′ S., 171° 14′ W.

Fonualoa, Tongan group.

Forbes, group on the Australian coast. 12° 18′ S., 143° 24′ E.

Forfano, see San Alessandro, Volcano islands.

Forsyth, one of the Wellesley group in the gulf of Carpentaria.

Fortuna, 360 m. northeast of Fiji. Same as Fotuna below.

Fotuhaa, islet of the Tongan group.

Fotuna, with Alofa the Horne islands. 8.2 m. by 5.2 m. Mt. Schouten is 2500 ft. high. 10° 14′ 15″ S., 178° 10′ W. **18.**

Four Crowns, see Anuanurunga of the Paumotu archipelago. **21.**

Four Facardins, see Vahitahi, Paumotu archipelago.

Fox, island 2 m. long, near Naviti in the Yasawa group, Fiji. 17° 11′ S., 177° 09′ 30″ E.

Fox, see Rénard of the Louisiade archipelago.

Francis, see Peru of the Gilbert islands. **7.**

Frankland, group on the coast of Australia. 17° 15′ S., 146° 15′ E.

Franklin (of Ingraham), see Motuiti, Marquesas islands.

Fraser, or Great Sandy, on the east coast of Queensland. 24° 42′ S., 153° 11′ E. North end.

Frazer, see Andema of the Carolines.

Freemantle (of Roberts), see Eiao, Marquesas islands.

Freewill, see Pegan. 0° 57′ N., 134° 21′ E.

French, islet in Laurie harbor, Enderby island.

French, group discovered by D'Entrecasteaux and named Iles Françaises. They are all high and adjacent to New Britain. **10.**

French Frigates, of the Hawaiian group, was discovered by La Pérouse November 6, 1786. He gave the name Basse des Frégates Françaises. It is usual to make the mistake in translating to print in the singular, but the name was given for the two frigates of the expedition. A picturesque rock, very difficult of ascent, rises 120 ft. from the lagoon, and around are reefs and sand banks. Coarse grass and some small shrubs compose the vegetation. The lagoon and outer shores abound in sharks. 23° 46′ 30″ N., 166° 16′ W. **2.**

Freycinet, in Dumbea passage, New Caledonia. Round, moderately high, wooded.

Friday, north from Prince of Wales in Torres strait. 10° 35′ S., 142° 09′ E.

Friendly, the name given by Cook to the Tongan group.

Frith, in the southwest part of Moresby strait, D'Entrecasteaux group. 2 m. E-W., 1.2 m. N-S.; 500± ft. high; many inhabitants. Wallaby abound.

Fua, islet of Hapai, Tongan islands.

Fulanga, Fiji group. The west bluff is 150 ft. high. Inhabited. Fine timber. 19° 04′ 30″ S., 181° 19′ 40″ E. East end.

Fulatutasi, islet of Fakaafo or Bowditch. 9° 24′ S., 171° 13′ W.

Funafana, southernmost island of the Ellice islands.

Funafuti, or Ellice, was discovered by Captain de Peyster March 18, 1819. A lagoon atoll 13 m. by 7.2 m. There are some 30 islets; principal one long but very narrow. Of recent interest as the scene of a boring into the coral reef, and of zoological investigations, which have been published by the Australian Museum.* 8° 35′ 50″ S., 179° 10′ 40″ E. **16.**

Fungalei, islet of Uvea or Wallis; about 200 ft. high.

Furneaux, a group in Bass strait composed of Clarke, Cape Barren and Flinders.

Futuna, or Erronan of the New Hebrides, is about 15 m. in circumference and 1931 ft. high. There are 900 inhabitants; of Tongan origin.

Gabagabawa, islet northwest from Duau, D'Entrecasteaux group. 9° 44′ S., 150° 53′ E.

Gabba, islet on south coast of New Guinea. 9° 45′ S., 142° 37′ E.

Gadogadoa, prominent islet, 315 ft. high, on the southeast coast of New Guinea.

Gagan, islet of Kwadjelin of the Marshall islands.

Galápagos. This group, on some accounts one of the most interesting in the Pacific region, lies on the equator some 600 miles from Equador, to which it belongs. It extends 1° 30′ both north and south of the equator, and the centre of the group is in longitude 90° 30′ W. Dampier, who visited these islands in May, 1684, gave a quaint account of their inhabitants: "The Spaniards, when they first discovered these islands, found multitudes of guanoes (iguanas) and land-turtle or tortoise, and named them the *Galapagos* (tortoise) islands. I do believe there is no place in the world that is so plentifully stored with these animals. The guanos here are fat and large as any that I ever saw; they are so tame that a man may knock down 20 in an hour's time with a club. The land-turtle are here so numerous that 500 or 600 men might subsist on them alone for several months without any other sort of provision; they are extraordinary large and fat, and so sweet that no pullet eats more pleasantly." All the early visitors speak of the abundance of this nutritious food; the buccaneers made good use of it, and in 1813 Porter, near a bay on the northeast part of James island, took on board about 500 individuals, or nearly 14 tons: *Journal of a Cruise made to the Pacific Ocean*, New York, 1822, 2 vols. 8vo. The tortoise are now nearly extinct, and some species (there are distinct ones on different islands) have wholly disappeared. See *Catalogue of the gigantic Land Tortoises in the British Museum*, by Günther, London, 1877. There are six principal islands, nine islets, and many mere rocks. All are volcanic, and Darwin (*Volcanic Islands*) estimated the number of extinct craters at 2000. The largest island, Albemarle, is 60×15 m., and 4700 ft. high. The other islands are Narborough, Culpepper, Wenman, Abingdon, Bindloe, Tower, James, Jarvis, Duncan, Indefatigable, Barrington, Charles, Hood and Chatham. See *Proceedings of the Royal Geographical Society*, 1880, pp. 742–755.

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*Taking this island as a typical Central Pacific atoll, we may note the fauna as given by Hedley in the Memoirs of the Australian Museum, iii., 1899. No other portion of this Central Pacific fauna has been so well studied. It is composed of 2 Mammals, 15 Birds, 5 Reptiles, 73 Fishes, 2 Enteropneusts, 87 Crustaceans, 27 Arachnids, 5 Myriopods, 42 Insects, 440 Molluscs, 1 Brachiopod, 28 Echinoderms, 5 Annelids, 12 Gephyrean worms, 16 Sponges, 8 Hydrozoa, 2 Scyphozoa, and 120 Actinozoa.

Galera (La), discovered April, 1568, by Pedro de Ortega Valencia and Hernan Gallego of Mendaña's expedition. Solomon islands.

Galoa, see Ngaloa, Fiji.

Gambier, see Mangareva in the Paumotu archipelago. Discovered by Captain Wilson in the *Duff* and named for Admiral Lord Gambier. **22.**

Ganges, nothing certain known of this island or reef reported in 39° 47′ N., 154° 15′ E.

Gannet, see Karewha, New Zealand.

Garahi, islet of Sariba, southeast coast of New Guinea; 355 ft. high.

Garden, see Iyin of the Louisiade archipelago.

Gardenijs was named by Tasman for a member of Council for India. Tasman calls it Gerrit de Nijs and Gardenys on the same page of his journal (p. 42 of translation), 1643. About 20 m. off the northeast coast of New Ireland; 1600± ft. high. The north end is in 3° 04′ S., 152° 38′ E.

Gardner, of the Bismarck archipelago, is about 29 m. WNW. from Gardenijs, and more than 1600 ft. high. The north point is in 2° 45′ S., 151° 55′ E.

Gardner, see Faraulep of the Caroline archipelago.

Gardner, of the Hawaiian group, is a rock 200 yards in diameter, and 170 ft. high. It was discovered by the captain of the American whaler *Malo*, June 2, 1820. 25° 00′ 40″ N., 167° 59′ 05″ W.

Gardner, or Kemins, is the southwestern island of the Phœnix group. 4° 37′ 42″ S., 174° 40′ 18″ W.⊙

Gardner, see Fonualei, Tongan islands.

Garnot, a volcanic cone in the Schouten group on the north coast of New Guinea. 3° 31′ S., 144° 34′ E.

Garrick, on the New Guinea coast. 7° 48′ S., 144° 52′ E.

Gaspar Rico, a name of Taongi, Marshall islands.

Gau, see Ngau, Fiji.

Gaua, Gog or Santa Maria of the Banks group, is 10 m. in diameter and 2200 ft. high. It has about 2000 inhabitants. 14° 15′ S., 167° 28′ E.

Gaudichaud, islet of Ruk, Caroline islands. 7° 32′ 35″ N., 150° 59′ 32″ E.

Gavotu, islet of Solomon islands.

Gawa, an island of curious structure in the Trobriand group. It is 2 m. in diameter, and a coral wall rises 400 ft., within which is a plateau 100 ft. lower. Population, 500±. 8° 30′ S., 151° E.

Gela, see Florida, Solomon islands.

Geloon, or Gelun, one of the Hermit islands. Inhabited. 1° 32′ S., 145° E.

Gente Hermosa, or Swain, was discovered by Quirós March 2, 1606, and by him named La Peregrina. Espinosa called it Isla de Gente Hermosa, from the beauty of the inhabitants. It is 7–8 m. in circumference, and 15–25 ft. above the sea; lagoon closed. At the time of the Wilkes expedition it was well wooded, but now the island is occupied by an American, Jennings, who has 800 acres planted with coconuts. 11° 05′ S., 170° 55′ 15″ W. **15.**

Georgian, name given by Cook to Tahiti and the southeast group; the northwest he called Society, for the Royal Society.

Gera, inhabited islet off the northeast coast of Guadalcanar, Solomon islands.

Gero, islet in Uarai bay, southwest side of New Caledonia.

Gerrit Denys, see Gardenijs of the Bismarck archipelago.

Gesira, islet 220 ft. high on the southeast coast of New Guinea.

Gibbons, see Daiwari of the Louisiade archipelago.

Gicquel, a volcanic island on the north side of New Britain. Found by late surveys to be a portion of the main island. West end, 4° 57′ S., 149° 52′ E. Named for one of the pilots of the *Recherche*. **10.**

Gie or Pine islet off Isle of Pines. **13.**

Gigila, islet 420 ft. high, wooded; connected with Abaga gaheia by reef on the southeast. Louisiade archipelago.

Gikuo, islet of Ontong Java. 5° 19′ S., 159° 46′ E. **11.**

Gilbert, islet, low and wooded, near Schouten islands on the north coast of New Guinea.

Gilbert, see Maiana of the Gilbert islands. **7.**

GILBERT ISLANDS.

Native Name.	Chart Name.	Discoverer.	Latitude North.	Longitude East.	Square Miles.	Population.
Scarborough Group:						
Makin.	Pitt.	Marshall & Gilbert, 1788.	3° 20′ 45″	172° 28′ 45″	2.7	500
Butaritari.	Touching.		3 11	172 21	11.5	1500
Maraki.	Matthew.	Marshall & Gilbert, 1788.	2 0	173 25	9.7	2000
Apaiang.	Charlotte.	Marshall & Gilbert, 1788.	1 58	172 58 30	15.5	3000
Tarawa.	Knox, Cook.	Marshall & Gilbert, 1788.	1 39 05	173 02	15.5	3000
Maiana.	Gilbert, Hall.	Marshall & Gilbert, 1788.	0 55 30	173 03 45	11.5	4000
Simpson Group:						
Kuria.	Woodle.	Marshall & Gilbert, 1788.	0 13	173 28 30	5	1500
Aranuka.	Henderville, Nauki.	Marshall & Gilbert.	0 13 25	173 41	6	1000
Apamama.	Hopper, Roger, Simpson	Marshall & Gilbert, 1788.	0 39	173 53 35	6.5	5000
Kingsmill Group:						
Nonouti.	Sydenham.		0 30 45	174 19 10	11.5	6000
Tapiteuea.	Drummond, Bishop.	Capt. Drummond.	1 08 45	174 45	9.7	8000
Peru.	Francis.	Capt. Clerk, 1827.	1 17 30	175 56 25	13.5	2000
Nukunau.	Byron.	Byron, 1765.	1 23	176 34	9.7	5000
Onotoa.	Clerk, Onutu.		1 53	175 30	9.7	3000
Tamana.	Rotcher, Phœbe.		2 32	175 55	4	2000
Arorai.	Hope, Hurd, Arore.	*Elisabeth, 1809.*	2 39	177 01	11.5	2500

Gilbert Islands, so named by Krusenstern for the captain of the *Charlotte*, consist of 16 islands not more than 20 ft. above the sea. The area of dry land is not more than 150 sq. m. Population, 50,000. They belong to Great Britain. The inhabitants have been christianized by the missionaries of the American and Hawaiian Boards and the Bible has been translated into the language of the group by Rev. Hiram Bingham, D.D. In former days the people were noted for the manufacture of armor from coconut fibre, and spears and knives armed with shark's teeth. Having no stone their adzes and axes were made from the hard shell of the *Tridacna gigas.*

Gilia, islet 200 ft. high, between Bagaman and Bobo eina, Louisiade archipelago.

Gilua, of the Kiriwina group. 8° 37′ 30″ S., 150° 50′ E.

Ginara, islet on the south coast Murua, Kiriwina group. 9° 07′ S., 152° 28′ E.

Gingala, group of six large and two smaller islands off Cape Crétin, northeast coast of New Guinea. Mostly connected with each other and the coast by reef.

Gipps, one of the French islands, 3 m. in circumference, thickly populated. Geysers on the southeast shore. 4° 32′ S., 149° 06′ E.

Givry, islet of Ruk, Caroline islands. 7° 08′ 55″ N., 151° 52′ 07″ E.

Gizo, of the Solomon islands, is 300–400 ft. high and has a fringe of reef and islets. 8° 01′ S., 156° 48′ E.

Glen, islet 30 ft. high off Cape Vogel, New Guinea. 9° 45′ S., 150° 05′ E.

Glennie, see Anser.

Glenton, or Kato katoa, is 3 m. in circumference and 400 ft. high. 10° 40′ S., 151° 04′ E.

Gloucester, on the Australian coast. 20° S., 148° 27′ E.

Gloucester, see Paraoa of the Paumotu archipelago. **21.**

Goat, islet off Pangopango harbor, Tutuila, Samoan islands.

Goat, islet 90 ft. high, off north coast of Vanua levu, Fiji, at entrance to Wailea bay.

Goat, fourth islet from the westward in Wotje atoll, Marshall islands.

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Gobigobi, rocky islet 330 ft. high, Brumer islands.

Gog, see Gaua or Santa Maria, Banks islands.

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Goodenough, see Dauila of the D'Entrecasteaux group.

Goodhope, see Rekareka of the Paumotu archipelago. **21.**

Goodhope of Schouten is probably Niuafoou of the Tongan group. **18.**

Goodman, see Nugarba of the Bismarck archipelago. **10.**

Goold, on the Australian coast. 18° 10′ S., 146° 12′ E.

Goro, better Koro, Fiji. Fertile, 9.5 m. by 4.5 m.. South point is in 17° 23′ S., 179° 25′ 50″ E. **14.**

Goulou, old spelling of Ngoli, Caroline islands.

Goulvain, see Dobu of the D'Entrecasteaux group. Goulvain was boatswain of the *Recherche.*

Gower, of the Solomon islands, was named by Carteret in 1767. It is the Inattendue of Surville (1769). 7° 55′ S., 160° 30′ E.

Gowland, off the south shore of Collingwood bay, New Guinea. 9° 30′ S., 149° 19′ E.

Grace, one of the Bonvouloir islands in the Louisiade archipelago. 10° 18′ S., 151° 08′ E.

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Gran Cocal, see Nanomanga of the Ellice islands.

Grand Duke Alexander, a name given by Bellingshausen in 1820 to Rakaanga or Reirson.

Grandes Cyclades, a name given by Bougainville to the New Hebrides.

Grange, see Banabana, New Guinea.

Grant, a low coral islet near the north point of Basilaki, southeast coast of New Guinea. 10° 32′ 45″ S., 151° 02′ 50″ E.

Grass, or Wanim, islet of the Louisiade archipelago, is 390 ft. high.

Green, islet on the Australian coast. 16° 15′ S., 146° 01′ E.

Green, islet of the south coast of Admiralty. The Groene Eylanden of Tasman. 2° 15′ S., 147° 05′ E.

Green, islet on northeast coast of Auckland.

Green, one of the low Tiri islands of Vanna levu, Fiji. 16° 24′ 14″ S., 179° 05′ 27″ E. ⊙

Green, islet in the southeast corner of the lagoon on Ocean, of the Hawaiian group. Named for W. L. Green, Hawaiian Minister of Foreign Affairs. 28° 25′ N., 178° 29′ W. **2.**

Green, islet of Volcano island in Blanche bay, New Britain.

Green, islet in Port Preslin, New Ireland.

Green, east of New Ireland, 300 ft. high, densely wooded.

Green, see Pinipel, Bismarck archipelago.

Greenwich, Constantin or Kapinga marangi, Caroline islands, consists of 28 islets on a reef 14 m. N-S., 8–9 m. E-W. Discovered in 1825; 150 inhabitants. 1° 04′ N., 154° 45′ E.

Greig, see Niau, in the Paumotu archipelago.

Grenville, a name of Rotuma.

Gressien, see Musehu in the New Guinea region.

Griesbach, on the northeast coast of Bougainville, Solomon islands, is a group of small islands. 6° 11′ S., 155° 44′ E.

Griffith, near New Guinea. Southwest end 7° 43′ S., 144° 35′ E.

Grimes or High, Caroline islands, was discovered by Captain Grimes in 1841. It is 6 m. in circumference, wooded. 9° 15′ N., 145° 33′ E.

Grimoult ≐ Kiamu, New Caledonia.

Gronemann, islet in Astrolabe bay, north coast of New Guinea. Small and uninhabited.

Gros, islet of Ruk, Caroline islands. 7° 27′ 02″ N., 151° 53′ 50″ E.

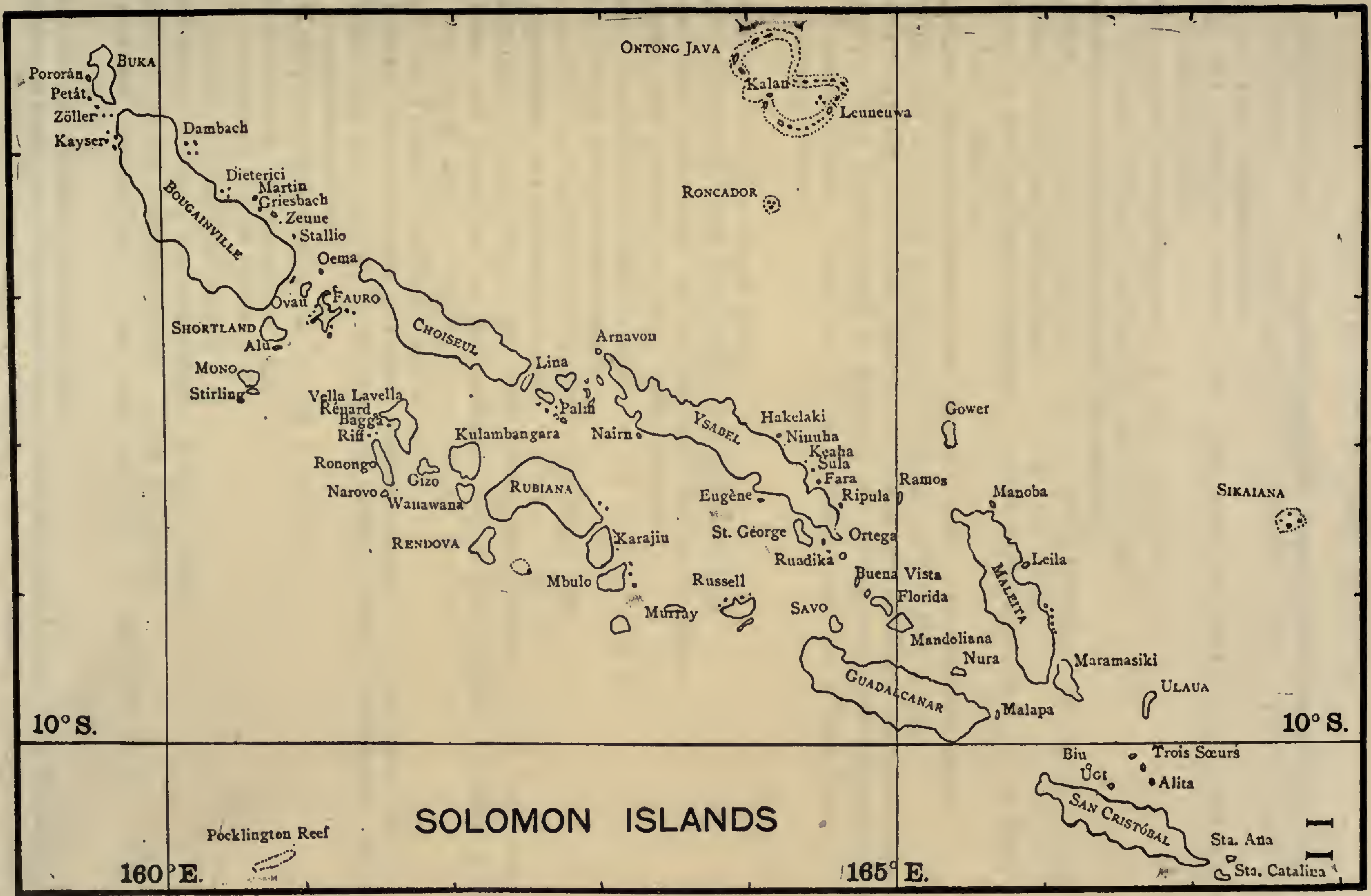
Guadalcanar, the Guadalcanal of Gallego and Mendaña who discovered it in April, 1568. One of the larger of the Solomon islands. Native name Guambata. 80 m. by 25 m. and 8000 ft. high. Northwest point is in 9° 15′ S., 159° 40′ E.; east point, 9° 50′ S., 160° 47′ E. **II.**

Guadaloupe (Isla de), in the Solomon islands. Discovered in April, 1568, by Mendaña's expedition in latitude 9° 30′ S.

Guahan, a spelling of Guam, Marianas group. Guajan is another form.

Gualito, see Ngualito, Fiji.

Guam or Guajan of the Marianas or Ladrones. On this island, in 1668, the Spaniards founded a mission under the direction of Padre de Sanvitores who declares that during the first year he baptized 13,000 people and converted 20,000. His conversions were so very thorough that when Dampier visited the islands in 1686 there were but 400 alive! Kotzebue, in 1817, found a single couple of the indigenes surviving. The population in 1873 amounted to about 7000, imported from the Philippines and the Carolines. Guam is 29 m. long. As a result of the



SOLOMON ISLANDS

Spanish-American war this island became the property of the United States. See map under Marianas. 13° 40′ N., 144° 55′ E., north point; 13° 15′ N., 144° 47′ E., south point.

Guap, see Yap, Caroline islands.

Guap, islet in Dallmann harbor on the north coast of New Guinea, is inhabited by peaceable Papuans.

Gudin, on the New Guinea coast. 3° 28′ S., 132° 30′ E.

Gué, islet near Coetlogon passage, Uea, Loyalty group.

Guetché, islet on the same reef with the preceding.

Guguan, an inaccessible rock 2.5 m. by 1 m. in the Marianas. 17° 19′ N., 145° 49′ E.

Guilbert, on the New Guinea coast. 3° 12′ S., 143° 15′ E.

Gulêwa, in the Louisiade archipelago, 1 m. east from Pana udiudi; 0.7 m. long, 315 ft. high; inhabited.

Gumaian, eastern and largest of the Basses islands, Louisiade archipelago.

Gumoti, islet near Roux group on the southeast coast of New Guinea.

Gunner's Quoin, or Ile Plate, islet on the south side of Huapu, Marquesas islands.

Guppy, a small, wooded island in Choiseul bay on the west side of Choiseul island, Solomon islands. Named for Dr. H. B. Guppy, who has written much on the Solomon islands.

Haafeva, islet of the Tongan group.

Haaio, islet on the south coast of Raiatea, Society islands.

Haane, islet on the south coast of Huahuna, Marquesas islands.

Haaono, islet of the Hapai group, Tonga islands.

Hack, islet of Oneatoa, Gilbert islands. 1° 54′ 30″ S., 175° 39′ E.

Hacq, islet of Ruk, Caroline islands.

Hagemeister, see Apatiki of the Paumotu archipelago. **20.**

Haggerstone, on the Australian coast. 12° 02′ S., 143° 18′ E.

Haidana, off Port Moresby on the south coast of New Guinea. 9° 27′ S., 147° 02′ E.

Haines, near James bay on the southeast coast of New Guinea; 1 m. long, 0.2 m. wide, 250 ft. high. 10° 41′ 10″ S., 151° 03′ 40″ E.

Hairiri, see Paraoa of the Paumotu archipelago.

Hakelaki, on the east coast of Ysabel, Solomon islands. 7° 53′ S., 159° 22′ E.

Halelei, islet on east side of Maramasiki, Solomon islands, inhabited by wild and treacherous natives.

Half-way, islet in Torres strait. 10° 08′ S., 143° 17′ E.

Halgan, see Uea, Loyalty group. **13.**

Hall, see Maiana, Gilbert islands. **7.**

Hall, see Morileu, Caroline islands. **4.**

Hamelin, or Leliogat; low and wooded. Loyalty group.

Hamilton, on the Australian coast. 20° 22′ S., 149° E.

Hammond, on the New Guinea coast, 3.5 m. by 1.5 m., 600 ft. high. 10° 30′ S., 142° 13′ E.

Hammond, see Rendova, Solomon islands.

Hanakubakuba, one of the Obstruction group, so called because they block the passage betreen Nuakata islaud and East cape of New Guinea. It is 270 ft. high.

Hancock of Roberts is Hatutu, Marquesas islands. **23.**

Hannam, island on the east side of Willaumez peninsula, New Britain.

Hannibal, on the Australian coast. 11° 37′ S., 142° 56′ E.

Hansa, see Vulcan, New Guinea.

Hanudamava, islet 273 ft. high, near Port Moresby on the southeast coast of New Guinea.

Hao, see Hau of the Paumotu archipelago. **21.**

Hapai, group of the Tongan islands, is composed of many small islands on a reef 40×23 m., of which little is known.

Harcourt, group consisting of Karu and Agné, north from Ugué bay on the northeast coast of New Caledonia.

Hardman, group of two islets, low and wooded, in the Louisiade archipelago.

Hardy, north of Collingwood bay on the coast of New Guinea. 9° 11′ S., 149° 21′ E.

Hardy = Ile St. Ignace, Loyalty islands.

Harikoia, second in size of the Brumer group, New Guinea; 520 ft. high; inhabited.

Harowani is the east of the Killerton group in Milne bay, on the east coast of New Guinea. A station of the London Missionary Society.

Harp, see Hau in the Paumotu archipelago. **21.**

Harper, on the coast of New Guinea. 8° 04′ S., 148° 09′ E.

Harris, or Mewadi, is off the coast of Normanby (Duau), D'Entrecasteaux group. 9° 52′ S., 150° 57′ E.

Hash, see Mokor of the Caroline islands. Said not to exist.

Hastings, in the Bonvouloir group, Louisiade archipelago; 400 ft. high. 10° 20′ S., 151° 52′ E.

Haszard, two islands in the Engineer group. The southern one is about a mile long, 200 ft. high, with a reef encircling. 10° 38′ S., 151° 22′ E.

Hat, see Vatu vara, Fiji group.

Hat, see Teauaua of the Marquesas group.

Hat, see Arabi of the New Hebrides.

Hat, islet in Geelvink bay on the north coast of New Guinea.

Hat, islet at entrance to Havannah harbor, of Faté, New Hebrides.

Hatutu, or Chanal of the Marquesas group, is 4 m. by 1 m., and 1380 ft. high. Perhaps the Nexsen of Captain Fanning, 1798. Marchand called it Chanal; Ingraham christened it Hancock, and Roberts named it Langdon. 7° 57′ S., 140° 34′ W. **23.**

Hau, Bow, or Harp, was discovered by Bougainville in 1768. Cook visited it the next year and called it Bow. It is 30 m. long and 5 m. wide. 18° 03′ 38″ S., 140° 59′ 15″ W. **21.**

Hawaii, the largest of the Hawaiian group, was called by Cook Owhyhee, misunderstanding the article O Hawaii. The island is wholly volcanic, composed of lava emitted from Kea, Loa, Hualalai and Kilauea. Of these volcanoes Kea has attained the height of 13,825 ft.; Loa, 13,675 ft.; and Hualalai, 8275. The area of the island is 4015 sq. m. While a large part of the surface is barren lava, along the shores and in the valleys on the north and east sides much sugar is produced, and on the west side the best coffee of the group is found.

Hawaiian Group. Called by Cook Sandwich islands in honor of his patron the Earl of Sandwich, a cordial hater of Americans. The group was discovered by the Spaniard Juan de Gaetano in 1555, and again by Cook January 18, 1778. They were annexed to the United States July 7, 1898.* The group consists of eight principal islands and a long range of uninhabited rocks extending many degrees to the northwest. Perhaps more books have been written about the Hawaiian islands than about any other group in the Pacific. The Geology has been published by Dana, the present writer and others; the Botany by Mann and Hillebrand; the Ornithology by Wilson, Rothschild, Dole and Bryan; the Entomology by Perkins and others; Herpetology by Stejneger. Other departments of Natural History have not been adequately studied. Historical books, apart from the Voyages, are by Dibble, Bingham, Fornander and Alexander. A grammar of the language and a dictionary were published by Andrews, and the translation of the Bible by the American missionaries preserves the Hawaiian language in its purity, while in common use it has become very corrupt. A very competent government survey, under the charge of Professor W. D. Alexander, has measured and mapped the topography. In 1898 the imports amounted to $10,368,815.09; the exports, $17,346,744.79; Custom House receipts, $896,975.70.

HAWAIIAN ISLANDS.

	AREA IN SQUARE MILES.	ACRES.	HEIGHT IN FEET.	POPULATION IN 1896.
Hawaii	4,015	2,570,000	13,825	33,285
Maui	728	466,000	10,032	17,726
Oahu	600	384,000	4,030	40,205
Kauai	549	348,000	4,800	15,225
Molokai	261	167,000	4,958	2,307
Lanai	135	86,000	3,400	105
Niihau	97	62,000	800	164
Kahoolawe	69	44,000	1,427	....

Kania, Lehua, Nihoa, Necker, French Frigates, Gardiner, Laysan, Lisiansky, Midway, and Ocean are rocks, uninhabited save by the *feræ naturæ*.

Haweis, see Elato of the Caroline islands.

Hawkesbury, islet in Torres strait. 10° 22′ S., 142° 07′ E.

Hayman, northwest of Hook on the Australian coast. 20° 03′ S., 148° 56′ E.

Hayter, see Sariba on the New Guinea coast.

Head, high, wooded island in China strait. 10° 34′ 35″ S., 150° 44′ 40″ E.

Heath, 200 ft. high, off the coast of New Britain. 4° 51′ S., 151° 32′ E.

Heath, see Rogeia, New Guinea.

Height, see Hemeni of the Marquesas.

Hemenahei, or Flat is the easternmost of the Calvados chain in the Louisiade archipelago; 2.5 m. E-W. by 1.2 m.: cultivated, but not inhabited because considered unhealthy. 11° 11′ S., 153° 05′ E.

Henderson, or Elisabeth of the Paumotu archipelago, was discovered by a boat's crew from the whaler *Essex*, in 1820, and named for Captain Henderson; 5 m. by 2.5 m., 80 ft. high; of raised coral, much undermined by waves. Cliffs are perpendicular, except on the north side. Uninhabited. 24° 25′ S., 128° 19′ W.

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*June 14, 1898, the Newlands annexation resolution passed the House of Representatives: July 6th the Senate confirmed the same; July 7th the President signed the joint resolution; August 12th the United States flag was raised, and President Dole transferred the jurisdiction to the United States; but it was June 14, 1900, when annexation went fully into effect.

Henderville, see Aranuka of the Gilbert islands.

Hennake (Henuake of Wilkes), see Pukapuka, Paumotu archipelago. **22.**

Henry, a low islet of the Underwood group, Fiji. 17° 41′ 30″ S., 177° 17′ 30″ E.⊙

Heraiki, Croker or St. Quentin, was discovered by Bonecheo in 1772; 4 m. NW-SE.; uninhabited. 17° 28′ S., 143° 23′ 42″ W.⊙ **21.**

Hereheretui, Bligh or San Pablo, was discovered by Quirós in 1606. It is low, uninhabited, and has a closed lagoon; about 3 m. in diameter. 21° 40′ S., 140° 38′ W.⊙

Hergest, see Marquesas islands.

Hergest Rock, see Motuiti of the Marquesas islands.

Hermit, Los Eremitanos, Agomes, a group of 17 islets, of which only Loof and Geloon are inhabited, extending 10 m. N-S., 13 m. E-W. 1° 36′ S., 145° E. **8.**

Heron, or Ola, is northeast from Roua, Louisiade archipelago. 10° 18′ S., 154° 16′ E.

Hervey, a name given by Cook September 23, 1773, for Captain Hervey, afterwards Earl of Bristol, Lord of the Admiralty. It applies properly to the two northern islands. In 1777 Cook discovered Mangaia, Aitutaki and others. Krusenstern proposed the name of Cook for the southern group, but there seems no geographical division and Cook's name should hold.

Hetau, islet of Bouka, Solomon islands. Small but thickly populated by men of powerful build and thorough cannibals.

Hetchin, islet of Malekula, New Hebrides. Inhabited and cultivated; natives have war canoes large enough to carry fifty men.

Heuschober, of the Admiralty group. 2° 44′ S., 147° 18′ E.

Hevaisi, islet of Panatinani, Louisiade archipelago, 275 ft. high.

Heyn, small, wooded, 95 ft. high; 30 m. northwest from Rook or Umboi in the Bismarck archipelago. 5° 25′ S., 147° 44′ E.

Heyou, of Beechey, is Hau of the Paumotu archipelago.

Hiaou, a spelling of Eiao, Marquesas islands.

Hibwa, a small, sandy islet 60 ft. high, northwest from Nuakata, Louisiade archipelago.

Hieh, in Auckland harbor, New Zealand.

High, on the Australian coast. 17° 09′ S., 146° 03′ E.

High, on the Australian coast. 10° 43′ S., 142° 24′ E.

High, islet on the northeast coast of Eromanga, New Hebrides. 18° 40′ S.. 169° 20′ E.

High, islet in Bismarck archipelago. 4° 48′ S., 150° 03′ E.

High, islet of Arno, Marshall islands.

High, see Grimes of the Caroline islands.

High, see Wuli of the Louisiade archipelago.

Higham, islet in Shallow bay, Admiralty island.

Hikueru, or Melville, was discovered by Cook and called Bird, April 6, 1769. Uninhabited atoll of the Paumotus, well wooded. The lagoon has a boat entrance. 17° 35′ S., 142° 39′ W. **21.**

Hilap, islet of Caroline islands.

Hillsborough, of the Beechey group of the Bonin islands. 27° 08′ N., 142° 15′ E.

Hinchinbrook, on the Australian coast. 18° 23′ S., 146° 15′ E.⊙

Hinchinbrook or Mau, see Vele, New Hebrides.

Hitchin, islet on south coast of Malekula, New Hebrides. **12.**

Hiti, or Eliza, one of the Raeffsky group in the Paumotus. Uninhabited. 16° 42′ S., 144° 09′ W. Also called Ohiti and Clute. **21.**

Hivaoa or Dominica, of the Marquesas islands, was discovered by Mendaña 21–22 July, 1595. Dumont D'Urville calls it Ouiva-Hoa. 22 m. by 6 m., 2820 ft. high. The most fertile and populous of the group. Population in 1880, 2500±. The east end is in 9° 47′ S., 138° 47′ W. **23.**

Hiw, the largest of the Torres group in the New Hebrides, is 6.5 m. × 3.5 m., and 1200 ft. high. 13° 04′ S., 166° 30′ E.

Hogoleu, see Ruk, Caroline islands.

Holborne, on the Australian coast. 19° 42′ S., 148° 21′ E.

Holeva, islet 2.5 m. long, on the same reef with Lefuka, Hapai group, Tongan islands.

Holland, see Howland.

Holt, see Taenga of the Paumotu archipelago. **21.**

Home, group on the Australian coast. 11° 57′ S., 143° 17′ E.

Honden, see Pukapuka, Paumotu archipelago. **22.**

Honegueneck, one of the Pleiades group northwest of Uea, Loyalty islands.

Honni, see One, Gilbert islands.

Hood, of the Galapagos, is the southernmost of the group; 640 ft. high.

Hood, see Fatuhuku, Marquesas islands.

Hook, on the coast of Australia. 20° 07′ S., 148° 57′ E.

Hope, islet on the Great Barrier reef.

Hope, see Arorai, Gilbert islands.

Hope (Captain Charles Hope) see Niuafou, Tonga islands.

Hopper, see Apamama of the Gilbert islands.

Horea, islet on the north side of Tiano pass, west coast of Raiatea, Society islands.

Horn, between Torres and Endeavor straits. 10° 36′ S., 142° 16′ E.

Horne, group discovered by Le Maire and Schouten May 19, 1616. Consists of Fotuna and Alofa. Under French protectorate.

Horno, of the Admiralty group. 2° 11′ S., 147° 46′ E.

Hosken, small, wooded, 150 ft. high. 7° 36′ S., 147° 37′ E.

Houaf, islet of Ruk, Caroline islands. 7° 39′ 05″ N., 151° 43′ 42″ E.

Houahouna, a chart form of Huahuna of the Marquesas islands.

Houtourou, the native name for Little Barrier in Auckland harbor, New Zealand.

Howe (Lord), see Mopiha, Society islands.

Howick, group on the Australian coast. 14° 30′ S., 145° E.

Howison, in the Fiji group; 36 ft. high. 18° 51′ S., 178° 25′ 30″ E.⊙

Howland was discovered by the American Captain Netcher, September 9, 1842. 2 m. × 0.5 m., 20 ft. high. A guano island now claimed by Great Britain. 0° 49′ N., 176° 40′ W.

Huaheine, easternmost of the Leeward group of the Society islands, discovered by Cook July, 1769; 20 m. in circumference; divided at high water into Huaheine nui and Huaheine iti. Population, 1100. 16° 42′ 30″ S., 159° 01′ 15″ W. **20.**

Huahuna, of the Marquesas islands. 8° 55′ S., 139° 34′ W.

Huapu, or Adams of the Marquesas group is a bold and rocky island rising to a height of 4042 ft., and covering about 45 sq. m. 9° 24′ S., 140° 05′ W. **23.**

Hudson, of the Fiji group, was named for Captain W. L. Hudson of the United States Exploring Expedition. 18° 52′ S., 178° 26′ E.⊙

Hudson, see Nanomanga of the Ellice group. **16.**

Hudson, see Mamanutha, Fiji.

Hudson Group, Fiji, comprises Carr, Walker, Johnson, Case, Emmons, Alden, Craven, Perry, Malolo, Malolo lailai, Soni, Palmer, Waldron, and Spieden, all named for members of the Wilkes Expedition. It is the extreme southwest group of Fiji.

Huga, islet of the Tongan group. Also Huga Haabai and Huga Toga.

Hueguénée, or Pine islet of Uea, Loyalty group.

Huerta (Garden), the Spanish name of the island called Trevanion by Carteret, now known by the native name Temotu. It is off the northwest end of Santa Cruz in the New Hebrides, about a mile from shore. Roughly triangular; 2.5 m. on a side.

Hugon, islet in Uitoe bay on the southwest side of New Caledonia.

Huhunati, one of the Abgarris group, Bismarck archipelago. 3° 25′ S., 154° 37′ E.

Hui-wadiamo, or Chaumont, lies directly south of Panaman, Louisiade archipelago. 11° 34′ S., 153° 08′ E.

Hull, a very small, reefed islet of the Bonvouloir islands, 0.5 m. NW-SE. 10° 23′ S., 151° 10′ E.

Hull, of the Phœnix group, was discovered by Wilkes August 26, 1840. A British protectorate was proclaimed July 11, 1889. The south point is in 4° 31′ 25″ S., 172° 18′ 15″ W. **17.**

Hull, see Sands of the Austral group.

Humphrey, see Manihiki. **19.**

Hunter, of the New Hebrides, is a volcano 0.5 m. in diameter and 974 ft. high, discovered by Captain Fearn of the *Hunter* in 1798. Sulphurous vapor issues from the wooded sides. 22° 24′ 02″ S., 172° 05′ 15″ E.

Hunter, see Fearn on southeast side of New Caledonia.

Hunter, see Kili of the Marshall islands. **6.**

Hunter, group off coast of Tasmania.

Huon, group northwest from New Caledonia, was discovered by the D'Entrecasteaux expedition and named for Captain Huon de Kermadec. Consists of North Huon, Leleizour, Fabre, and Surprise; the last in 18° 31′ S., 163° 08′ E. **13.**

Hurd, see Arorai of the Gilbert islands. **7.**

Huxley, see Bobo eina of the Louisiade archipelago.

Iabama, islet in the Louisiade archipelago, 220 ft. high; wooded and cultivated, between Nuakata and East cape.

Iakuilau, a low coral and sand islet on the west coast of Viti levu, Fiji.

Iambu, a rock, densely wooded, 370 ft. high, west from Yanutha, Ringgold group, Fiji.

Iataui, the western islet of the Montemont group, Louisiade archipelago; 40 ft. high.

Ibargoita, see Suk of the Caroline islands.

Ibbetson or Ibbetsen, see Aurh of the Marshall islands.

Ich-Higen, islet of Port Puebo on the northeast coast of New Caledonia.

Idaha or Aplin, a low, uninhabited islet at the northwest end of the visible Great Barrier reef. 9° 24′ S., 146° 51′ E.

Ié, islet of Port Muéo on the southwest side of New Caledonia.

Iehgabate, islet on the northeast coast of New Caledonia.

Iehhingen, islet on the northeast coast of New Caledonia.

Ienga, islet near Port Yengen on the northeast side of New Caledonia.

Ieroni, see Maître, New Caledonia.

Ifalik or Wilson, of the Caroline islands was discovered by Captain Wilson in the *Duff* in 1793. It consists of four islets about a lagoon reef 5 m. in circumference. Ifalik, Moai, Ella and Fararik. 7° 14′ N., 144° 31′ E. **3.**

Iguari, East and West, two islands in the east side of China strait, the first 400 ft. high, the other about 200 ft. high; cultivated and wooded.

Igurin, islet on the south side of Eniwetok, Marshall islands.

Ikara is on the north side of Yasaiosa bay, New Guinea. 9° 39′ S., 150° 02′ E.

Ikaika, Keino or Cliffy, of the Louisiade archipelago, is 250 ft. high off west side of Wari.

Ikop, eastern islet of Namolipiafane, Caroline islands. **4.**

Iku, or Lone Tree islet in Bingham channel, Apaiang, Gilbert islands. **7.**

Ilamu or Frith, west islet in Moresby strait between Dauila and Moratau of the D'Entrecasteaux group. 9° 26′ S., 150° 24′ E.

Ile Bouzet, see Ile Nou.

Ile Nou, a convict station near Noumea, New Caledonia.

Ile Plate, or Gunner's Quoin in the Marquesas islands.

Ilei, one of the Arch group; 0.3 m. NW-SE.; 270 ft. high. New Guinea.

Iles du Golfe = Ugi and Biu of the Solomon islands.

Illasasa, of the Kiriwina group. 8° 37′ S., 151° 02′ E.

Illina, a peak 615 ft. high, between Bougainville and Fauro of the Solomon islands.

Imbert, a reef islet in the Louisiade archipelago. 11° 02′ S., 151° 17′ E.

Immer, see Aniwa, New Hebrides.

Impakel, islet of Yap, Caroline islands.

Imsa, islet in Orangerie bay, south coast of New Guinea. 10° 24′ S., 149° 34′ E.

Inattendue of Surville is Gower of Carteret. Solomon islands.

Indefatigable, of the Galapagos, also called Duke of Norfolk; 24 m. E-W., 17 m. N-S.

Independence, a name given in 1860 to Malden.

Independence, see Sophia of the Ellice group.

Indispensable, of the Solomon islands. 12° 30′ S., 160° 15′ E.⊙

Ine, islet on the south side of the lagoon of Arno, Marshall islands. A trading station there.

Infernal, see Nokue, Isle of Pines.

Inueki, islet on the south coast of Korido, Schouten islands. 0° 55′ S., 135° 30′ E.

Inyeug, islet of Aneiteum, New Hebrides. 20° 15′ 17″ S., 169° 44′ 44″ E.

Ipotet, a rocky islet off Cape Vogel on the northeast coast of New Guinea.

Irakong, or Eil Malk of the Pelew group. 10° 11′ 30″ N., 134° 27′ 30″ E.

Iririki, islet with a beacon in Fila harbor on the southwest side of Faté. New Hebrides. 187 ft. high.

Iriru, islet on the south side of the entrance to Faaroa bay, Raiatea, Society islands.

Isénay or La Baleine, one of the Pleiades group northwest from Uea, Loyalty islands.

Isie, islet of St. Vincent bay on the southwest side of New Caledonia.

Islas de los velas latinas = Southern Marianas.

Islas de los Reyes, name given by Saavedra in 1528 to a part of the Caroline islands supposed to be Uluthi.

Isubobo, islet off the southeast coast of New Guinea, near Sideia island; 115 ft. high.

Itai, islet in Nandi waters on the west coast of Viti levu, Fiji.

Itamati, islet on the reef of Pavuvu or Russell islands, Solomon group.

Itapa, see Santa Ana, Solomon islands.

Itiahi, islet at the entrance to Maupiti lagoon, Society islands.

Ito or Didymus, on the southeast coast of New Guinea. 1.2 m. × 0.5 m.; 500 ft. high; uninhabited. 10° 33′ 50″ S., 150° 46′ 25″ E.

Iwa, see Jouveney of the Kiriwina group.

Iyin, or Garden, is south of Tagula of Louisiade archipelago; 170 ft. high; cultivated.

Iyoh, islet on the coast of Malaita, Solomon islands.

Jabbering, group of four islets in Ward Hunt strait. 9° 38′ S., 149° 53′ E.

Jabeia, islet between Yasawa and Naviti, Fiji.

Jabor, islet of Jaluit, Marshall islands. 5° 55′ N., 169° 39′ E.

Jabwat, of the Marshall islands; 0.7 m. × 0.2 m. 7° 43′ N., 169° 05′ E. **6.**

Jacob, islet on the New Guinea coast. 3° 07′ S., 132° 27′ E.

Jacquemart, off the south coast of Campbell island, New Zealand.

Jacquinot, a conical island off the north coast of New Guinea. 3° 25′ S., 144° 22′ E.

Jaluit or Bonham, of the Marshall islands, was discovered in 1809 from the brig *Elisabeth.* It is an atoll with 50 islets on a reef 32 m. N-S., and from 7 to 20 m. wide. In 1882 the population was 700. The lagoon has a depth of 25–30 fathoms. Now the seat of the German Government in the Marshall group. The north point, according to Captain Brown, is in 6° 22′ N., 169° 22′ E. **6.**

James, of the Galapagos, is 1200 ft. high. 0° 15′ 20″ S.

Jamna, on the north coast of New Guinea. The natives superior to those farther east.

Jane, islet in the Caroline islands.

Jane, islet, 600 ft. high, at the head of Port Moresby, New Guinea.

Jappen, see Jobi, New Guinea.

Jardines (Los), a name given by the Spanish navigators to some garden-like islands eastward of the Marianas. Krusenstern thinks Namonuito in the Carolines. *Mémoires hydrographiques*, p. 16.

Jarrad, group on the south shore of Collingwood bay, New Guinea. 9° 34′ S., 149° 30′ E.

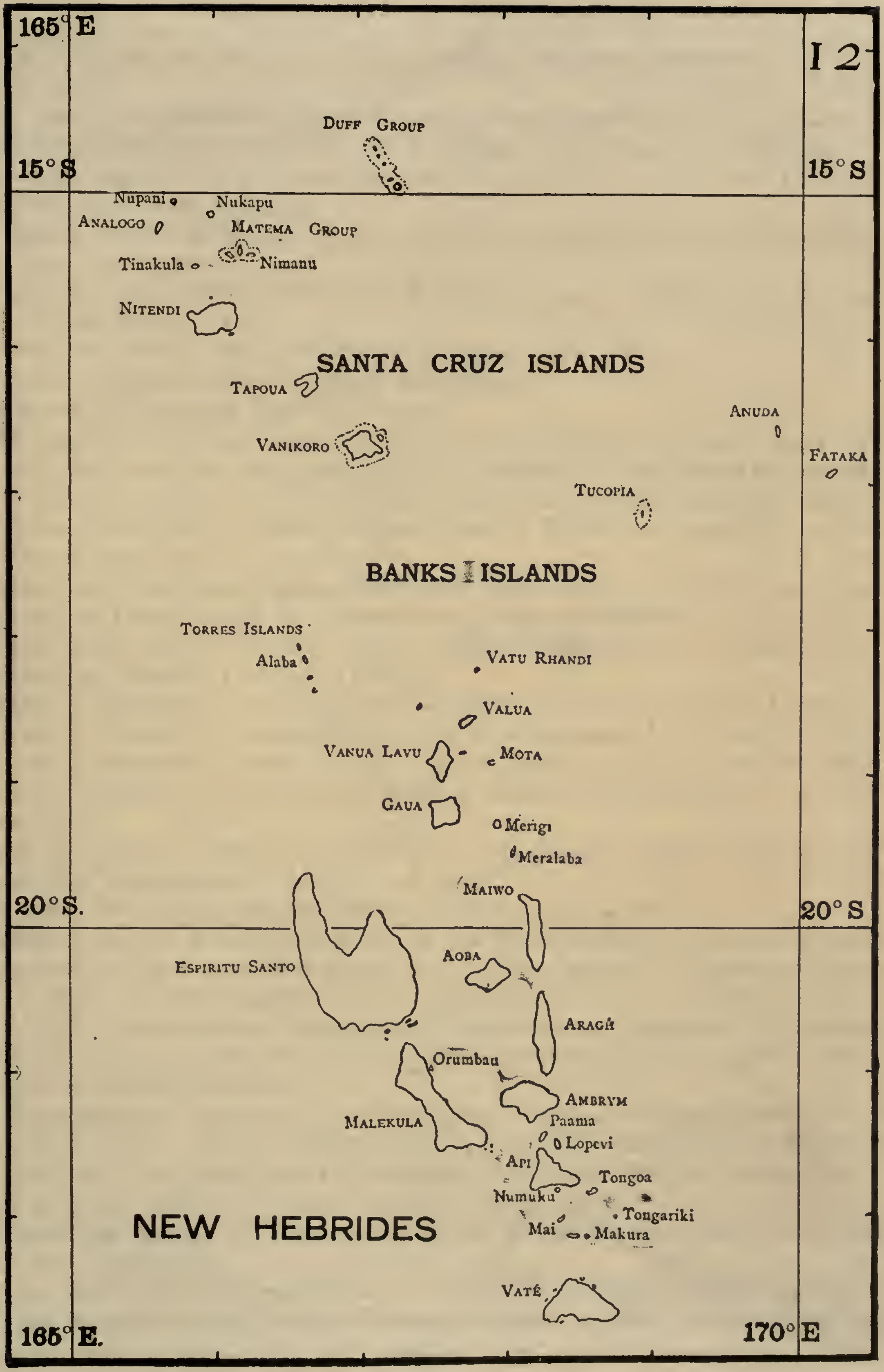
Jarvis or Bunker was discovered by Captain Brown in the English ship *Eliza Francis* August 21, 1821. A raised coral island 10–12 ft. above the sea, of triangular outline; 1.7 m. E-W., 1 m. N-S. No trees, and little grass; mostly guano. Annexed to Great Britain June 3, 1889. 0° 22′ 33″ S., 159° 54′ 11″ W. **19.**

Jarvis, 525 ft. high, 36 m. from the coast of New Guinea. 9° 55′ S., 142° E.

Jawt, islet of Ruk lagoon, Caroline islands. **4.**

Jekoits, islet of Ponapé, Caroline islands. An irregular triangle, 1.5 m. ± on a side, 1000 ft. high. **5.**

Jemo, Temo or Steep-to was seen from the *Nautilus* in 1799. It is 0.7 m. in diameter. 10° 00′ 45″ N., 169° 42′ E. Marshall islands. **6.**


165° E
12
DUFF GROUP
15° S
15° S
Nupani
Nukapu
ANALOGO
MATEMA GROUP
Tinakula
Nimanu
NITENDI
SANTA CRUZ ISLANDS
TAPOUA
ANUDA
VANIKORO
FATAKA
TUCOPIA
BANKS ISLANDS
TORRES ISLANDS
Alaba
VATU RHANDI
VALUA
VANUA LAVU
MOTA
GAUA
Merigi
Meralaba
MAIWO
20° S.
20° S
AOBA
ESPIRITU SANTO
ARAGH
Orumbau
AMBRYM
MALEKULA
Paama
Lopevi
API
Tongoa
Numuku
Tongariki
NEW HEBRIDES
Mai
Makura
VATÉ
165° E.
170° E

Jenkins, 3 m. long, off the coast of New Britain, Bismarck archipelago. 5° 15′ S., 150° 39′ E.

Jeridy, islet at the east end of Majuro lagoon, Marshall islands. 7° 04′ N., 171° 24′ 30″ E.

Jermaeloff or Yermaloff of Bellingshausen is Taenga of the Paumotu archipelago.

Jervis is the largest of the Bellevue group in Torres strait. 9° 07′ S., 142° 11′ E.

Jervis, an island of the Galapagos.

Jesu Maria, of the Admiralty group, is 600–800 ft. high, 7–8 m. long, inhabited. 2° 20′ S., 147° 40′ E.

Jesus (Isla de), discovered by Alvaro de Mendaña January 15, 1568. Perhaps Nanomea, Ellice group.

Jih, north islet of Odia atoll of the Marshall islands.

Joannet, see Panatinani of the Louisiade archipelago.

Jobenor, islet of Lukunor, Marshall islands.

Jobi or Jappen, a large island at the entrance to Geelvink bay on the New Guinea coast. 110 m. E-W., 10–15 m. wide, 2500 ft. high. Inhabited by Papuans on the lowlands, but on the mountains a more savage tribe is in constant hostilities with the dwellers on the shore. Belongs to the Sultan of Tidore and is under Dutch rule. The east end is in 1° 46′ S., 136° 52′ E.

Johnson, one of the Hudson group, Fiji; 70 ft. high. 17° 36′ 30″ S., 177° 00′ 20″ E.⊙ Named for Lieutenant R. E. Johnson of the Wilkes Expedition.

Johnston group consists of three thickly wooded islets, about 70 ft. high, in the Admiralty islands. 2° 25′ S., 147° 06′ E.

Johnston or Cornwallis was discovered December 14, 1807, by Captain Johnston of H. M. S. *Cornwallis*. Examined in 1859 by Lieutenant J. M. Brooks of U. S. schooner *Fennimore Cooper*. It is a lagoon island 3.5 by 3.2 m. and affords guano. Claimed by the American Guano Company of San Francisco. 16° 45′ N., 169° 39′ W.

Jomard, low group consisting of Panawaipona and Panarairai and a few islets in the Louisiade archipelago. 11° 15′ S., 152° 09′ E.

Jombombo, islet in Astrolabe bay, northeast coast of New Guinea.

Jouvency or Iwa, 24 m. east from Kitava in the Kiriwina group, a mile in diameter, consisting of coral terraces and precipices, thickly wooded. Ascent from the sea by ladders. Ebony in quantity. A finer people than on New Guinea. 8° 44′ S., 151° 44′ E. Jouvency was Geographical Engineer on the *Espérance*. In the latest publication of the Admiralty Hydrographic Bureau this island is called Jouveney and is so printed on charts.

Juan Fernandez, or Mas-a-tierra, was named for a Spaniard voyaging from Lima to Valdivia in 1563. It is a volcanic island 12×4 m., 3000 ft. high, 360 m. west from Valparaiso. For three years the residence of Alexander Selkirk, the prototype of the immortal Robinson Crusoe. 13° 37′ 45″ S., 78° 13′ W.

Judge and his Clerk, 24 m. N., 20° E. *true* from the north end of Macquarie island. 54° 22′ S., 158° 46′ E.

Jurien, see Kitava of the Kiriwina group. Jurien was a volunteer on the *Espérance*.

Jurij, islet on the west coast of Ebon, Marshall islands. 4° 36′ 33″ N., 168° 41′ 35″ E.

Kaafa, see Pylstaart or Ata of the Tongan islands.

Kaan, a group of eight islets discovered by Tasman in 1643 and by him named Anthony Caens after a member of the Council for India. They are due north from the northeast point of New Ireland. 3° 30′ S., 153° 28′ E. The people are described as naked, ferocious and armed with spears. **10.**

Kabara, see Kambara, Fiji.

Kahoolawe, of the Hawaiian group, is a rather barren looking sheep pasture southwest of Maui. It has an extent of 44,000 acres, and is 1427 ft. high. **1.**

Kadais, islet in the lagoon of Egum atoll in the Kiriwina group. 9° 26′ S., 151° 57′ E.

Kaboer, islet in Geelvink bay, on the north coast of New Guinea.

Kadavu, see Kandavu, Fiji.

Kahalape, islet of Andema, Caroline islands.

Kaiari, islet of Jobi, New Guinea.

Kaileuna, of the Kiriwina group. 8° 35′ S., 150° 55′ E.

Kaimbo, islet of volcanic and coral formation off east point of Yathata in the Lau group, Fiji. 1.5 m. long, 150 ft. high, cultivated.

Kairu or D'Urville. Natives wear little clothing, are small (5 ft. high) and active; wear hair projecting behind in a conical case 18 in. long. West end, 3° 20′ S., 143° 26′ E.

Kajangle, group of four small islands surrounded by a reef in the Pelew group. The largest is 4 m. in circumference. 8° 03′ N., 134° 39′ E.

Kakea, islet of Port Patteson, Vanua Lava, New Hebrides.

Kakula, of the New Hebrides, is a low, tree-covered islet on the reef which extends a mile from the north shore of Faté. It is inhabited.

Kalan, islet of Ontong Java. 5° 30′ S., 159° 15′ E.

Kálap, see Mokil, Caroline islands.

Kalau, islet on the southwest side of Eua, Tongan group.

Kalo, islet at west end of Udjelong, Marshall islands.

Kaluma, a name of Panawina of the Louisiade archipelago.

Kama, see Eurupig, Caroline islands. **3.**

Kamac or Table islet in Infernet passage on the southwest coast of New Caledonia.

Kamako or Collie, an islet of Mangareva.

Kambara, Fiji, 3.5 m. by 2 m.; of rectangular form, fertile and well wooded; 350 ft. high on the northwest side where there is no reef. South end, 18° 58′ 13″ S., 181° 03′ E.

Kanathia, Fiji, 5 m. west from Valua valavo, is 3 m. N-S., 2.5 m. E-W., 830 ft. high. The peak is in 17° 16′ 30″ S., 180° 53′ E. **14.**

Kandavu (Kadavu), Fiji, was discovered by Bligh and called Mywoolla. It is 32 m. ENE-WSW., and from half to eight miles wide. Buke levu or Mount Washington is 2750 ft. high. Population, about 7000. The peak is in 19° 05′ S., 177° 58′ E.

Kandavu, islet in Nandi waters on the west coast of Viti levu.

Kandomo, an uninhabited islet of Mamanutha ira group, Fiji.

Kao, a conical rock, 3030 ft. high, northeast from Tofua, Tongan group. 19° 41′ 35″ S., 174° 59′ 50″ W.

Kapeniur, islet of Ailuk, Marshall islands. At the north end; 4 m. in circumference.

Kapenmailang, a small group near Nukuor, Caroline islands, on which a pure Polynesian dialect is spoken.

Kapenoar, islet of Pakin, Caroline islands. 7° 40′ 40″ N., 157° 44′ E. **5.**

Kapenor, islet of Likieb on the west side, Marshall islands. **6.**

Kapinga marangi, a name of Greenwich, Caroline islands.

Kapiti or Entry, New Zealand. 40° 50′ S., 174° 35′ E.

Kapuma, islet in South bay of Faté, New Hebrides.

Karajiu, Solomon islands. 8° 38′ S., 158° 10′ E.

Karajiu geta, Solomon islands. 8° 30′ S., 158° 07′ E.

Karajiu miki, Solomon islands. 8° 27′ S., 158° 05′ E.

Karewha, in Bay of Plenty, New Zealand. 37° 29′ S., 176° 10′ E.

Kar-Kar or Dampier, a high volcanic peak, 5000 ft. high±; 36–40 m. in circumference. 4° 42′ S., 145° 58′ E.

Karkone, one of the Hermit islands. 1° 32′ S., 145° 01′ E.

Karlshoff, see Aratika of the Paumotu archipelago. **21.**

Karobailo Kawa, islet of the Talbot group between Kawa and Mata Kawa at the mouth of the Wassi Kussa river, New Guinea. 9° 16′ S., 142° 11′ E.

Karoni, high islet within the reef of Mothe, Fiji. 18° 40′ S., 181° 28′ 40″ E.

Karu, islet of the Harcourt group, north from Ugné bay on the northeast coast of New Caledonia.

Kassa, New Guinea coast. 9° 15′ S., 142° 19′ E.

Kata, see Enderby, Caroline islands. **4.**

Katafanga, Fiji, a small island inhabited only during the turtle season. It is the property of an European. East point is in 17° 30′ 30″ S., 181° 19′ 30″ E.

Katai or Connor, is triangular, each side 1.5 m., 430 ft. high, well wooded. 10° 40′ 30″ S., 151° 05′ 30″ E.

Katelma, islet of Pakin, Caroline islands. 7° 02′ N., 157° 47′ 30″ E.

Kater, one of the Bonin group, 160 ft. high. 27° 30′ N., 142° 16′ E.

Katharine, see Udjae, Marshall islands.

Katiu or Saken, of the Paumotu archipelago, was discovered by Bellingshausen in 1822. The southeast point is in 16° 31′ S., 144° 12′ 10″ W. **21.**

Kato katoa, see Glenton, New Guinea.

Kattou, islet off the north point of Babeltop, Pelew islands.

Kau, uninhabited island on the coast of New Guinea.

Kauai, of the Hawaiian group. Here Cook first landed. It is the fourth in size and perhaps the most beautiful of the group. Area, 348,000 acres. Population, 15,228 in 1896. Volcanic action seems first to have ceased at this end of the chain. Atooi of Cook. 28 m. E-W. by 23 m. N-S. **1.**

Kauehi, see Kawehe of the Paumotu archipelago. **21.**

Kaukura or Aura, of the Paumotu archipelago, is about 24 m. long, wooded and inhabited. 15° 43′ S., 146° 50′ 36″ W. **20.**

Kaula, a red volcanic islet off Niihau of the Hawaiian group; 17 m. SW. from Niihau.

Kaven, islet of Maloelab, Marshall islands; 2.2 m. by 0.7 m. 8° 51′ N., 170° 49′ E.

Kaveva, islet in Sausan passage on the north coast of Vanua levu, Fiji.

Kawa, westernmost of the Talbot group, New Guinea. 9° 16′ S., 142° 09′ E.

Kawau, in Auckland bay, New Zealand.

Kawehe or Kauehi, the Vincennes of Wilkes, in the Paumotu archipelago, was discovered by Captain Fitzroy in H. M. S. *Beagle* in 1835. It is 12 m. N-S., open lagoon with 15 fathoms. South point is in 15° 59′ 48″ S., 145° 09′ 30″ W. **21.**

Kayangle or Moore of the Pelew islands; 1.5 m. long. 8° 02′ 30″ N., 134° 38′ 30″ E. Better spelling is Kajangle.

Kayser, off west coast of Bouka, Solomon islands. 5° 31′ S., 154° 36′ E.

Kea, an inhabited islet, 570 ft. high, near Vanua levu, Fiji. 16° 39′ S., 179° 57′ 20″ E.

Keaba, islet of Ysabel, Solomon islands. Sometimes spelled Keaha. 8° S., 159° 28′ E.

Keai, near Port Chalmers, New Guinea. 8° 10′ S., 146° 06′ E.

Keats, in Torres strait. 9° 41′ S., 143° 25′ E.

Kelifijia or Falafagea, of the Tongan islands. 28° 31′ S., 175° 18′ W.

Keluna, islet off north coast of New Guinea, near Cape King William. A German station.

Kenin, see Gardner of the Phœnix group. **17.**

Kempe, group of two small islands connected by reef 1.5 m. north from Goulvain or Dobu.

Kemtai, islet 20 ft. high, on the southeast coast of New Guinea.

Kendec, wooded islet in Kumak passage on the northwest coast of New Caledonia.

Kennedy, see Motuiti of the Santa Cruz islands.

Kent, group in Bass strait between Flinders and Cape Wilson. See F. Nixon, *Narrative of a visit to the islands in the Bass's Straits*, London, 1857, 8vo.

Kepara, or Two Brothers, was discovered by D'Urville. It is west from Bultig, New Guinea.

Keppel, see Niuatobutabu of the Tongan islands. **18.**

Kerakera, islet on the bordering reef of Wari, Louisiade archipelago; 60 ft. high and grassy.

Kerawarra in the Bismarck archipelago. 4° 17′ S., 152° 25′ E.

Kermadec group. Named by D'Entrecasteaux for the commander of *L'Espérance*, Huon de Kermadec. The group is 500 m. ENE. from the north cape of New Zealand, and extends 140 m. NNE-SSW. There are four islands: the largest, Raoul, was named by D'Entrecasteaux for the officer who first saw it; the south one for his ship, L'Espérance. Lieutenant Watts, in 1788, discovered Curtis and Macauley. Group annexed to Great Britain in 1886 and now a part of the colony of New Zealand.

Kerué, see Squally, of the Bismarck archipelago. **10.**

Kewley, see Udjelong of the Caroline islands. **5.**

Kia, islet 780 ft. high, north of Vanua levu, Fiji, and just within the north point of the Great Sea Reef. 16° 14′ S., 179° 06′ E. **14.**

Kiamu or Grimoult, islet in Mueo bay, southwest side of New Caledonia.

Kiangle, see Kajangle, Pelew islands.

Kibu, of the Kiriwina group. 8° 40′ S., 150° 48′ E.

Kie, islet 760 ft. high, off Muthuata on the north side of Vanua levu, Fiji. 16° 13′ 54″ S., 170° 05′ E.

Kie, islet on the southeast reef of New Caledonia.

Kilagen, islet north side of Udjelong, Marshall islands.

Kilap, islet of Ulithi, Caroline islands.

Kili or Hunter group. Discovered by Captain Dennett; in the Marshall group; 2.5 m. in diameter, uninhabited. 5° 40′ N., 169° 15′ E.⊙

Killerton, group of small islands on the coast of New Guinea: Harowani, inhabited; Mahabarina, Waga tumaiawa on the southwest, and four smaller islets. 10° 23′ S., 150° 38′ E.

Kimbombo, three islets within a reef 12 m. in circumference; south and largest densely wooded, 190 ft. high; middle one coral and sand, 120 ft. high; northernmost and smallest also coral and sand, 100 ft. high. Fiji.

Kimuta, westernmost and largest of the Rénard group, Louisiade archipelago; 3.2 m. long. Villages on the north side.

Kinamue, islet of Ruk, Caroline islands.

Kinde, islet north from Nemmène peninsula, southeast coast of New Caledonia.

King, off northwest point of Tasmania.

King George group, name given by Byron in 1765 to two atolls, Takapoto and Takaroa of the Paumotu archipelago. **21.**

King George, Wallis' name for Tahiti, Society islands.

King, see Taiaro, of the Paumotus.

Kingsmill, a name of a portion of the Gilbert islands, sometimes applied to the whole group.

Kioa, in Somosomo strait, east of Vanua levu, Fiji; 5 m. NE-SW., 920 ft. high, uninhabited.

Kiriwina or Trobriand. Names applied both to the principal island and to the whole group of low coral but fertile islands. The population is more than 18,000 of Polynesian, and a mixture of Papuan, Polynesian and Malay. **9.**

Kitava or Jurien, of the Kiriwina group, is an elevated atoll 300–400 ft. high, with an area of 5–6 sq. m. There are 13 villages in the depression which marks the old lagoon. This is surrounded by a wooded coral wall 50–100 ft. high. Inhabitants are peaceful, industrious and fond of wood carving. They make wide-mouthed earthen pots for cooking, and have remarkable dances, using a sort of double shield in that amusement. 8° 40′ S., 151° 24′ E.

Kiup, islet of Makin, Gilbert islands. 3° 17′ N., 172° 56′ 20″ E.

Kiusick, in the Yasawa group, Fiji; 40 ft. high. 16° 41′ S., 177° 33′ E.⊙

Kivave, islet of Fakaafo. 9° 22′ 20″ S., 171° 12′ W.

Kiwai, a long and populous island at the mouth of the Fly river on the south coast of New Guinea; 37 m. long. South point in 8° 54′ S., 143° 36′ E.

Knox, see Ailinginae, Marshall islands. Also islet of this atoll. 11° 05′ N., 166° 35′ E.

Knox, see Eiao, Marquesas islands.

Knox, a common misprint for Knoy, see Tarawa, Gilbert islands.

Knox, islet 47 ft. high, in the Yasawa group, Fiji. 17° 26′ S., 177° 02′ E.⊙

Knox group, ten islets 5 m. W. by N-E. by S.; 3 m. SW. from Mille, Marshall islands.

Knoy, see Tarawa, Gilbert islands.

Kobiloko or Yam, islet of Pavuvu or Russell group, Solomon islands. 9° 02′ S., 159° 05′ E.

Kodokupuei, islet of Sansoral. 5° 20′ N., 132° 20′ E.

Koikoi, on the New Guinea coast. 10° 17′ S., 149° 21′ E.

Koliviu, a mangrove-covered islet of the Maskelyne group, New Hebrides.

Komachu, islet of Guadalcanar, Solomon islands.

Komo levu, island north of Ularua, Fiji; 1.5 m. by 0.5 m., and 270 ft. high; inhabited. 18° 37′ 30″ S., 181° 20′ E.

Komo ndriti, dark, rocky companion to the last; levu = large, ndriti = small. 18° 38′ S., 181° 18′ 30″ E.

Konaoe doi, islet of Ono i lau, Fiji.

Kondogi, islet of Mucndo bay on the southwest side of New Caledonia.

Konduyo, islet in Isie passage, New Caledonia. 21° 52′ S., 165° 47′ E.

Koniene, has two curious peaks, in Kataviti bay on the northwest side of New Caledonia.

Konig islet is north from Bilibili on north coast of New Guinea.

Kora, islet east from Kia, Fiji.

Korak, south of Kajangle, with Arayonzet and Carapellas on a reef 4.5 m. N-S., 5 m. E-W. Pelew islands.

Kordiukoff, a name given by Kotzebue in 1824 to Rose island of the Manua group (Samoan).

Korido or Korrido, of the Schouten group, is little known. 0° 45′ S., 135° 35′ E.

Koro or Goro, Fiji, is 10 m. N-S., 4.5 m. E-W., 1840 ft. high; wooded, many coconuts. Population about 1000. North point is in 17° 13′ 30″ S., 179° 26′ 30″ E.

Korolib or Goat, Fiji, wooded islet 320×200 yards. 16° 46′ 20″ S., 180° 01′ 40″ E.

Korotuna, Fiji, small, fertile, inhabited. 16° 04′ S., 180° 37′ 30″ E.

Korror, the seat of government of the Pelew islands; 3.5 m. by 2.5 m.

Korsakoff, see Ailinginae of the Marshall islands. Usually Remski-Korsakoff.

Kosmann or Maragili, of the Louisiade archipelago; uninhabited. 11° 06′ S., 151° 30′ E.

Kotu, group of small islands at the southwest part of the Hapai group, Tongan islands. Principal islands, Oua and Luanamo.

Kotuho, Fiji. 16° 48′ 50″ S., 179° 25′ 30″ E.⊙

Koulo, islet of the Tongan group.

Koutonsoff of Bellingshausen (1820) is Makemo, Paumotu archipelago.

Kowata, islet 570 ft. high off west coast of Viti levu, Fiji.

Krudu, see Quoy, New Guinea.

Krusenstern, see Tikahau of the Paumotu archipelago. **20.**

Kubokonilick, in the Bismarck archipelago. 4° 13′ S., 152° 23′ E.

Kuebuni, islet north from Port Goro, southeast side of New Caledonia.

Kuiao, islet of the Kiriwina group. 8° 38′ 30″ S., 150° 51′ E.

Kuku, islet 87 ft. high on the southwest side of Malolo, Hudson group, Fiji. 17° 47′ S., 177° 07′ E.

Kukuluba, islet 65 ft. high, east of the Duchateau group, Louisiade archipelago. 11° 16′ S., 152° 21′ 45″ E.

Kulambangara or Kulambangra, of the Solomon islands, is 16 m. N-S., 13 m. E-W.; 5000 ft. high. 7° 58′ S., 157° 05′ E.

Kumbara, on northeast coast of Guadalcanar, Solomon islands. 9° 31′ 10″ S., 160° 29′ E.

Kumi, islet of Rongelab, Marshall islands. 11° 26′ 35″ N., 167° 10′ E. **6.**

Kunie, see Isle of Pines. **13.**

Kurateke, see Vanavana of the Paumotu archipelago. **22.**

Kuria or Woodle, of the Gilbert islands, was discovered by Captains Marshall and Gilbert in 1788; 5 m. by 2.5 m. 0° 13′ N., 173° 28′ 30″ E. **7.**

Kurimarau, islet of Pavuvu, Solomon islands.

Kuriva is southeasternmost of the Engineer group, Louisiades; 2 m. E-W., 400 ft. high. Large village on the south side.

Kurudu is 3 m. east from Jappen on the north coast of New Guinea. It is 8 m. E-W.

Kusaie, Ualan or Strong, of the Caroline islands, was discovered in 1804 by Captain Crozer, who named it for Caleb Strong, the Governor of Massachusetts; 8.5 m. E-W., 7.7 m. N-S.; 24 m. in circumference; volcanic. Mt. Crozer is 2152 ft. high. Population about 400. 5° 19′ N., 163° 06′ E. **5.**

Kussa, of the Talbot group, north of Boigu, New Guinea. 9° 16′ S., 142° 21′ E.

Kuthiu, a form of Kusaie, Caroline islands.

Kutomo or Lesser Isle of Pines, a portion separated from the main island by a narrow channel.

Kutu, islet of Satoan, Caroline islands. **4.**

Kutusow, see Utirik of the Marshall islands. **6.**

Kuvyo, islet of Maskelyne group, New Hebrides.

Kwadelen or Kwajalong, see Kwadjalin.

Kwadjalin, of the Marshall islands, consists of many islets about a lagoon, of which the west side is 58 m. long. The north islet is in 9° 14′ N., 167° 02′ E. Mentschikow group of map No. **6.**

Kwaiatabu, a name of Duau, D'Entrecasteaux group.

Kwaiawata, of the Kiriwina group, is nearly 2 m. in diameter. The lagoon has a high, wooded, coral wall around, and the whole indications are of a raised island. About 400 inhabitants.

Kwaiope, islet southeast from Moratan of the D'Entrecasteaux group. 9° 43′ S., 150° 54′ E.

Kwataua, small island north from Rogeia, on the southeast coast of New Guinea, belonging to the London Missionary Society.

Kwewato, a coral island, densely peopled, in the Kiriwina group. 8° 30′ S., 151° E.

Labi, of the Kiriwina group. 8° 36′ S., 150° 50′ E.

Laciba, see Lathiba, a small, low island off Ngau, Fiji.

La Desgraciada, a name on the Spanish chart captured by Anson and supposed to apply to one of the Hawaiian islands.

Ladrone, a name given to the Marianas by some of the Spanish sailors of Magalhâes, who fancied the indigenes were great thieves. As they were not more so than other islanders, or perhaps than the sailors who named them, it seems a pity to attach the stigma of such a name to the group, especially as all the original inhabitants have been "converted" into the grave.

Lae or Brown, of the Marshall islands, was discovered by Captain J. W. Brown in December, 1858. It is a group of 14 islets on a reef 6 m. in diameter. About 250 inhabitants. 9° N., 166° 20′ E.

Lagoon of Cook is Vahitahi of the Paumotu archipelago. Lagoon of Bligh is Tematangi of the same group.

Lagrandière, of the Kiriwina group. Named for Lieutenant Lagrandière of the *Espérance.* 8° 52′ S., 151° 12′ E.⊙

Lágrimas de San Pedro, a discovery of Quirós, April 27, 1606, was perhaps the Banks islands.

Laignel, northeast from Moratau, was named for Ensign Laignel, one of D'Entrecasteaux' officers. It is in 9° 18′ S., 150° 55′ E.

Laika is nearly 2 m. north from Tongoa of the New Hebrides and is not permanently inhabited.

Lain, in Geelvink bay, northwest coast of New Guinea. 0° 56′ S., 135° 30′ E.

Laing, islet in Hansa bay, north coast of New Guinea. 4° 12′ S., 144° 52′ E.

Lainé or Uo, is north from Maré of the Loyalty group. It is low and covered with pine trees.

Lakahia, of the New Guinea region. 4° 06′ S., 138° 28′ E.

Lakeba, see Lakemba, Fiji.

Lakemba, a fertile island 5 m. E-W., 3 m. N-S.; 720 ft. high. It has an extensive reef. Population has a large mixture of Tongan. Lakemba was the first Vitian island christianized by the English Mission in 1835. Northeast point is in 18° 13′ S., 181° 12′ E. **14.**

Lakena, islet of Nanomea, Ellice group. **16.**

La Madalena, a name given by Mendaña to Fatuhiva of the Marquesas islands.

La Menu, islet on the northwest coast of Api, New Hebrides. 16° 33′ S., 168° 06′ E.

La Mesa, a name on the Spanish chart captured by Anson, supposed to apply to Hawaii.

Lamoliork, see Ngoli of the Caroline archipelago.

Lamotrek or Swede, a triangular reef about 6 m. WNW-ESE. There are several islets on the border of the lagoon which are inhabited. 7° 24′ N., 146° 30′ E.

Lamut, islet off the southwest coast of Vanua levu, Fiji.

Lanai, an island in the central portion of the main Hawaiian group containing 86,000 acres; 3400 ft. high, with a population of 110. **1.**

Lancier, see Akiaki of the Paumotu archipelago. **22.**

Langdon of Roberts is Hatutu of the Marquesas islands.

Laraoro, New Guinea. 10° 23′ S., 149° 20′ E.

Larkin, of the Caroline islands.

Laseinie, a group of six islets in the Louisiade archipelago.

Laskar, see Lisiansky of the Hawaiian group. **2.**

Lassion, another form of Lisiansky.

Las Tres Marias, see Three Sisters, Solomon islands.

Laté i Tonga, Laté i Viti and Booby, three islets in the lagoon of Reid reef in the Lau group, Fiji. 17° 54′ S., 178° 23′ W.⊙

Laté or Lette, a volcanic island of the Tongan group, 6–7 m. in circumference and 1790 ft. high. 18° 52′ S., 174° 37′ W.

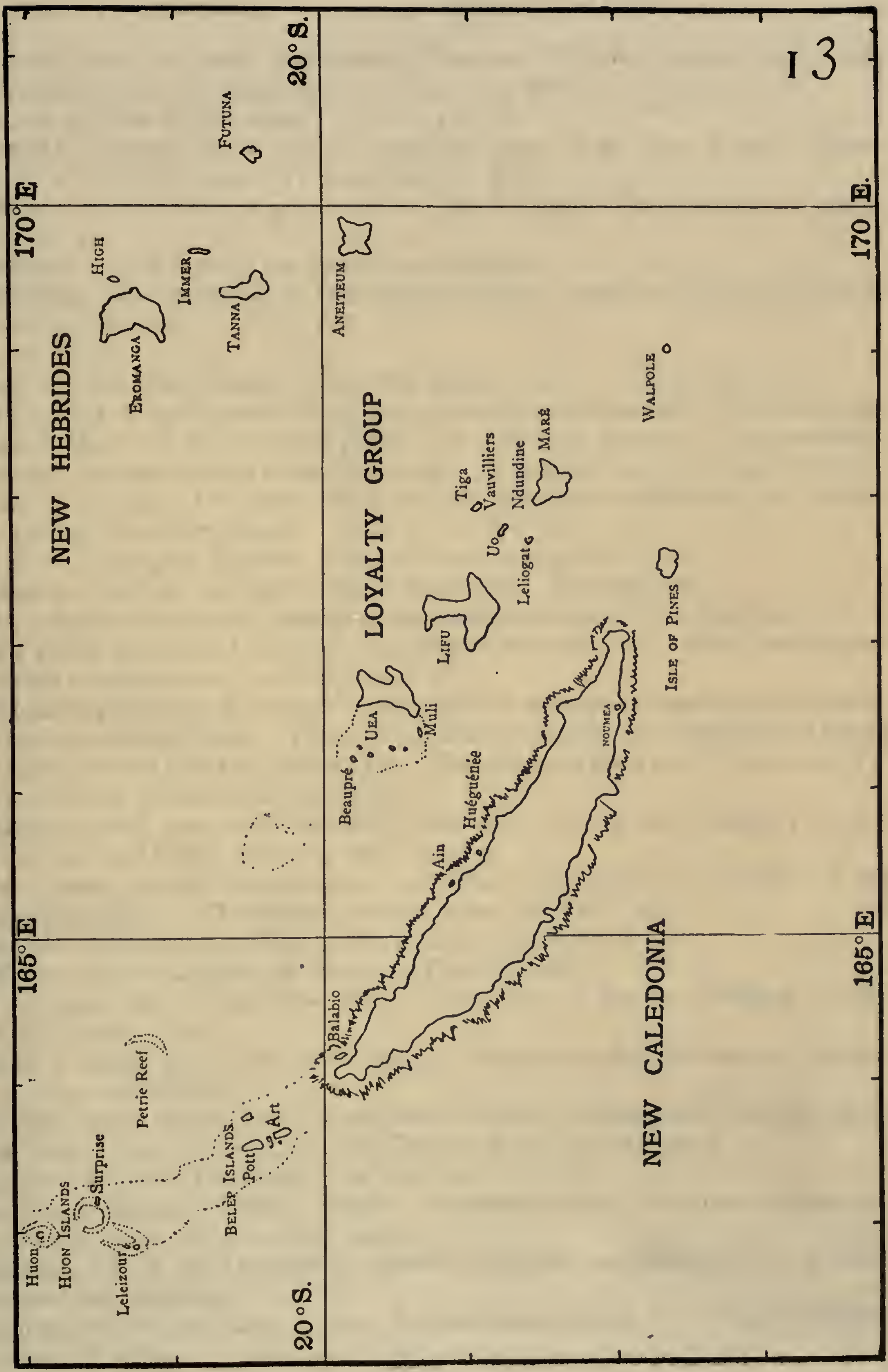
Lathiba, small, low island off Ngau, Fiji.

La Tortue, one of the Pleiades group, northwest from Uea of the Loyalty islands.

La Treguada, see Ulava, Solomon islands.

Laucala, see Lauthala, Fiji.

Laughlan, a group around a lagoon 5 m. E-W., discovered by Captain Laughlan in the *Mary*, 1812. The ten islets are Wabomat, Budelun, Wasimu, Oburak, Bukulan,


13
NEW HEBRIDES
LOYALTY GROUP
NEW CALEDONIA
170° E
170 E.
165° E
165° E
20° S.
20° S.
FUTUNA
HIGH
IMMER
EROMANGA
TANNA
ANEITEUM
WALPOLE
MARÉ
Tiga
Vauvilliers
Ndundine
Uo
Leliogat
LIFU
ISLE OF PINES
UEA
Muli
Beaupré
Huéguénée
Ain
NOUMEA
Balabio
Art
Pott
BELEP ISLANDS
Petrie Reef
Surprise
HUON ISLANDS
Huon
Leleizour

172a

Ozareo, Sureb, Kuneotu, Bwanibwani, Tamaris. The group is also called Nada. There are about 170 inhabitants—a colony from Murea. 9° 18′ S., 153° 38′ E.

Lauru, on the New Guinea coast. 0° 31′ S., 134° E.

Lausancay, a group of low islands extending some 20 m. along a reef; between 8° 25′ S., 150° 20′ E. and 8° 31′ S., 150° 26′ E. **9.**

Lauthala (Laucala), Fiji, is 4 m. long and 880 ft. high. The peak is in 16° 47′ S., 180° 23′ E.

Lauvergne, islet of Ruk, of the Caroline archipelago.

La Vandola, the easternmost of the Admiralty group; nearly circular, about 600 ft. high, well peopled. 2° 15′ S., 148° 11′ E.

Lavao, see Yule.

Layard, two low, small islands on the New Guinea coast. 7° 35′ S., 147° 32′ E.

Layrle, islet at the north side of St. Vincent bay on the southwest side of New Caledonia.

Laysan or Moller, of the Hawaiian group, is an American discovery. Captain Stanikowitch, in 1828, named it after his vessel. It extends 2 m. by 1.5 m. and is perhaps 25 ft. high. For some years it has been leased by the Hawaiian Government to parties who export guano. 25° 47′ 47″ N., 171° 53′ W. **2.**

Lazaroff or Lazarev, see Matahiva of the Paumotu archipelago. **20.**

Leausan or Protection, on the northwest side of Faté, New Hebrides.

Lebris, a high islet in Uarai passage on the southwest side of New Caledonia.

Lebrun group, northwest from Wari, consists of Hikarika and Dodigi, two conical islands extending E-W. 10° 52′ S., 150° 57′ E.

L'Echiquier group was discovered by Bougainville and named from a fancied resemblance to a checkerboard. There are 53 islets, with some 800 inhabitants of a dark copper color and with long, stringy hair. The northeast point is in 1° 06′ S., 144° 30′ E.

Lefuka, a form of Lifuka found on old charts.

Legoarant group, two small islands off the north coast of New Guinea, 3 m. from shore and half a mile apart. 5° 08′ S., 145° E.

Lehua, a small, volcanic island about a mile from the north end of Niihau of the Hawaiian group. The channel between is very shallow. **1.**

Leiga, islet of the Basses islands in the Louisiade archipelago.

Leigh, islet off Port Carteret on the coast of New Ireland.

Leili is large, low, of horseshoe shape, in Sio bay of Malaita, Solomon islands. 8° 48′ S., 160° 53′ E.

Lejeune, a wooded islet on the north edge of a long reef in the Louisiade archipelago. 11° 12′ S., 151° 50′ E.

Lekeleka, islet on Barrier reef, 5 m. southeast from Oua, Hapai group, Tongan islands.

Lekin, islet in form of a cube, between Uea and Moali, Loyalty group.

Leku, low islet off Viti levu, Fiji. 18° 04′ S., 177° 16′ E.⊙

Lele, islet of Kusaie, Caroline islands. According to Lütke the natives pronounce the name Lella. 5° 20′ N., 163° 09′ E.

Leleigana, one of the Obstruction islands, Louisiade archipelago; 325 ft. high, wooded and inhabited.

Leleizour, one of the Huon group. It has guano worked by a French establishment. 18° 18′ S.

Leleppa or Protection, New Hebrides; 2.5 m. NNW-SSE., 1.5 m. wide, 637 ft. high; inhabited. Off the northwest coast of Faté, forming the west side of Havannah harbor.

Leligoat or Hamelin, a low and wooded islet of the Loyalty group.

Leluvia is south from Moturiki, Fiji; low and covered with coconut walks. 17° 48′ 30″ S., 178° 46′ E.

Lenen, islet of Ailinglablab of the Marshall islands.

Leocadie group, two islets off the New Guinea coast.

Leonidas, low islet 0.7 m. in circumference, off Vanua levu, Fiji. 16° 39′ 24″ S., 178° 36′ 50″ E.⊙

Leper, see Aoba (Omba), New Hebrides.

Leru, islet of Pavuvu, Solomon islands.

Lesson, an active volcano (May 20, 1874) on the north coast of New Guinea; 3.5 m. in circumference, 2200 ft. high. The natives wear their hair in bundles enclosed in basket work and often projecting a foot behind. 3° 35′ S., 144° 47′ E. **8.**

Lette, see Laté, Tongan islands.

Leuen, south island of Namu atoll of the Marshall islands. 8° 14′ N., 168° 03′ E.

Leuneuwa, islet of Ontong Java. 5° 28′ S., 159° 44′ E.

Levalea, islet of Pavuvu, Solomon islands.

Lewis, islet of the Yasawa group, Fiji. 17° 28′ 40″ S., 177° 00′ 10″ E.⊙

Lib, of the Marshall islands; 2.2 m. E-W. 8° 20′ N., 167° 30′ E. (Captain Dennett.) **6.**

Lifu, raised coral, 100–250 ft. high, in the Loyalty group. Population, 7000±. Formerly cannibals. 20° 36′ S., 167° 06′ E. **13.**

Lifuka, low, 5 m. by 2 m., in the Hapai group, Tongan islands. 19° 49′ S., 175° 41′ W. **18.**

Likieb, of the Marshall islands, was discovered by Kotzebue November 5, 1817. It consists of 44 islets on an atoll 27 m. long and from 7–12 m. wide. 9° 48′ N., 169° 21′ E.

Likuri, a sand islet off west coast of Viti levu, Fiji.

Lileb, see Kwadjalin of the Marshall islands.

Lily, on the New Guinea coast. 9° 25′ S., 147° 02′ E.

Limu, islet in the Hapai group, Tongan islands.

Lina, of the Solomon islands. 7° 15′ S., 157° 32′ E.

Linthicum, in the Underwood group, Fiji; low and wooded. 17° 44′ S., 177° 15′ 10″ E.⊙

Lisiansky, of the Hawaiian group, was discovered by Captain Lisiansky in the *Neva*, October 15, 1805. It is 3 m. by 2 m., and 40 ft. high. 26° N., 173° 57′ W. **2.**

Livingston, see Namonuito of the Caroline islands. **4.**

Lizard, islet of Huéguénec, Loyalty islands.

Lizard, islet on the Australian coast. 14° 40′ S., 145° 28′ E.

Lloyd, on the Australian coast. 12° 46′ S., 143° 26′ E.

Lo or Saddle, Torres islands; 3.5 m. N-S. by 2 m. E-W., 500 ft. high. Natives quiet and friendly. 13° 20′ S., 166° 35′ E.

Loa (Observatory of Wilkes), is northeast from Oneata to which it is connected by a sunken reef; 140 ft. high. 18° 24′ 40″ S., 181° 28′ E.⊙

Loangi, a mile long, off Vanua levu, Fiji.

Loch, New Guinea region. 7° 45′ S., 144° 12′ E.

Locol, islet at the head of Port Moresby, New Guinea.

Lofaga, of the Tongan islands. 19° 51′ S., 175° 30′ W.

Logea, in China strait, New Guinea. 10° 39′ S., 150° 38′ E.

Loliwari, a name of Ambrym, New Hebrides.

Lolo or Roro, forms of the native name of Yule. See Roro.

Loloata with Lolorna, on east side of Port Moresby; 130 ft. high. 9° 33′ S., 147° 17′ E.

Lomlom or Nevelo, of the Matema islands, is 5 m. by 1.5 m., and 200 ft. high. British protectorate was proclaimed August 28, 1898.

Lone Tree, see Iku of Apaiang, Gilbert islands. Another of the same name on the north reef of Tarawa.

Long, volcanic island 2000 ft. high, north from Vitiez strait, north coast of New Guinea. North point is in 5° 14′ S., 147° 07′ E.

Long, in Torres strait. 10° 02′ S., 142° 50′ E.

Long, islet in South bay, southwest side of New Caledonia.

Longatana, islet of Fakaafo, Union group. 9° 24′ 40″ S., 171° 12′ W. **17.**

Longuerue, group in the southwest part of Huon gulf; islands are small, wooded and rocky, but Saddle island is 2.5 m. long and 700 ft. high. Named for Midshipman Longuerue on the *Recherche*. 7° 20′ S., 147° 16′ E.

Lonkahu, islet of Tatafa of the Hapai group, Tongan islands.

Loof (Leaf) is the central island of the Hermit group; 500 ft. high. 1° 28′ S., 145° 05′ E. **8.**

Lopevi, a volcano of the New Hebrides, 4714 ft. high, active, occasionally ejecting ashes. Few inhabitants along the shore. 16° 28′ S., 168° 18′ E. **12.**

Lord Hood, see Marutea of the Paumotu archipelago. **21.**

Lord Howe was discovered February 17, 1778, by Lieutenant Ball. Volcanic and mountainous, Mt. Gower at the southern end being 2840 ft. high; about 5.5 m. long. On the west side are extensive coral reefs. Population, in 1880, 65. Belongs to New South Wales. 31° 36′ 30″ S., 159° 05′ 10″ E. See J. B. Wilson's Report, Sydney, 1882; also a paper by Mr. Corrie, Proceedings Royal Geographical Society, 1878, pp. 136–143.

Lord Howe, islet off the southeast end of Santa Cruz. A British protectorate was proclaimed August 18, 1898.

Lord Howe, see Mopeha, Society islands.

Lord Howe, see Ontong Java, Solomon islands.

Lord North, see Tobi.

Lord Salisbury, islet on the New Guinea coast. 7° 52′ S., 144° 28′ E.

Losap, of the Caroline islands was discovered by Duperrey. It has about 300 inhabitants. Peace islet, in the same lagoon, has a population of 200. 6° 53′ N., 152° 42′ 20″ E.

Los Eremitanos, see Hermit. **8.**

Los Magos, Los Monjes, names on the Spanish chart captured by Lord Anson; supposed to apply to the Hawaiian islands.

Los Martires, see Tamatam, Caroline islands.

Los Negros, islets of Admiralty island. 1° 55′ S., 147° 16′ E.

Los Reyes are two small, wooded islands about 500 ft. long. They are 15 m. northwest from La Vandola in the Admiralty group. 2° S., 148° 03′ E.

L'Ostange of Duperrey is Nengonengo of the Paumotu archipelago. **21.**

Los Valientes of Don Felipe Tompson is Ngatik of the Caroline islands. **5.**

Lottin is a nearly circular volcanic cone, 5200 ft. high.; 12.5 m. NW. by N. from Cape King of New Britain. 5° 18′ S., 147° 35′ E. **10.**

Lot's Wife, see Rica de Oro.

Louisiade archipelago is an extensive range of islands situated southeast from New Guinea, between 10° 10′–11° 50′ S. and 154° 30′–150° 55′ E. Probably seen by Torres in 1606, but named by Bougainville in 1793. Surveyed by D'Urville in 1840. There is gold on Tagula (Sud-est), and although many portions of the group are still unknown it is thought to be rich in vegetable productions. There are more than 80 islands besides many rocks and reefs. Inhabitants are of a dark copper color, with Papuan hair; cartilages of nose and ears much distended. Cannibals on occasion. Named for Louis XV. of France. **9.**

Lountass, in the Bismarck archipelago. 4° 50′ S., 150° 51′ E.

Lovuka, a small, sandy islet in Nandi waters off the west coast of Viti levu, Fiji.

Low, see Siassi on the east coast of New Guinea. **10.**

Low archipelago, see Paumotu archipelago.

Lowendahl, see Nui of the Ellice group. **16.**

Loyalty group, discovered by Captain Butler in the *Walpole* in 1800, or in the *Britannia* in 1803. The group runs parallel to the coast of New Caledonia at a distance of 50–60 m. Consists of Maré or Nengone, Lifu, Uea, with five islets between the first two. **13.**

Luanamo, one of the Koto islands, Hapai group, Tongan islands.

Luard islets are in Hercules bay on the New Guinea coast; six in number, low (40–70 ft.), and covered with trees. 7° 40′ S., 147° 42′ E.

Lütke, see East Faiu, Caroline islands.

Luhuga, islet of Hapai group, Tongan islands.

Lukunor, of the Caroline islands, has been called the gem of Micronesia. It was discovered in 1793 by Captain J. Mortlock; 18–20 m. in circumference. Population about 850. It is not more than seven feet above the sea. 5° 29′ 18″ N., 153° 58′ E. **4.**

Lukunor, islet off the southeast extreme of Mille, Marshall islands.

Lungur, islet of Ponapé, Caroline islands.

Lusançay, reefs in the Kiriwina group, named for a lieutenant on the *Espérance*.

Lydia, see Pikela, Caroline islands.

Lydia, see Nuakata near East cape of New Guinea.

Lydia, see Udjae, Marshall islands.

Lynx, see Nintao of the Ellice group. **16.**

Maabunghi, islet at the mouth of Tanlé bay on the northwest coast of New Caledonia.

Maben, low and wooded, a mile ENE. from Kitai, New Guinea.

Mabneian, a small, wooded island 0.7 m. long on the north edge of a long reef, Louisiade archipelago.

Mabui, an islet of Misima, Louisiade archipelago; small, wooded, 90 ft. high. 10° 56′ S., 152° 36′ E.

Mabuiag, island in Torres strait.

Macarthur, on the Australian coast. 11° 45′ S., 143° E.

Macaskill, see Pingelap of the Caroline islands.

Macauley, of the Kermadec group, is 3 m. in circumference, 780 ft. high; volcanic, uninhabited; surrounded by perpendicular cliffs 600 ft. high, but can be scaled by means of a lava stream on the north side. 30° 16′ S., 178° 32′ W.

Mac Donald, in the Bismarck archipelago. 5° 26′ S., 150° 43′ E.

Mackenzie, see Uluthi of the Caroline islands. **3.**

Maclear, islet of the Admiralty group, 200 ft. high, 900 by 700 yards. 1° 55′ S., 146° 32′ E.

Macquarie, in 54° 44′ S., 159° 49′ E., is 1200–1500 ft. high. In the early part of this century it is said 80,000 seals were killed on it. Now inhabited by birds only.

Madaamet, islet of Ailinglablab, Marshall islands. Sometimes spelled Madamett.

Maer (pronounced *Mer*) is the largest of the Murray group in Torres strait. On the same reef with Dauer and Waier. Population, 450. 9° 55′ S., 144° 02′ E.

Maewo, see Maiwo, New Hebrides.

Magdalena, see Fatuhiva of the Marquesas islands. **23.**

Magellan, an old name of the Marianas.

Maghyr or Magur, islet of Namonuito, Caroline islands. At extreme north of atoll. 8° 59′ 45″ N., 150° 14′ 30″ E.

Maghyrarik, islet of Namonuito, Caroline islands.

Magnetic, island of the Australian coast. 19° 10′ S., 146° 51′ E.

Mago, see Mango, Fiji.

Magone, islet on the northwest coast of New Caledonia.

Mahabarina, middle islet of the Killerton group off east coast of New Guinea; 0.5 m. × 0.2 m.

Mahea, islet at entrance to Hamene bay, Tahaa, Society islands. **20.**

Mahigi, see Ortega, Solomon islands.

Mai or Mae is the name often given to Three Hills of the New Hebrides, but it is the name of the central district, not of the whole island. See Three Hills.

Maia iti, see Tubuai manu of the Society group.

Maiakei, a corrupt spelling of Maraki, Gilbert islands.

Maiana or Hall, of the Gilbert islands, was called Gilbert by Captains Marshall and Gilbert in 1788; then called Hall by the Captain of the brig *Elisabeth* in 1809. It is 9 m. NE-SW. by 6 m. In 1886 the population was 1700. 0° 55′ 30″ N., 173° 03′ 45″ E.

Maioiti, see Tapamanu, Society islands.

Mairu, off the New Guinea coast. 10° 25′ S., 149° 21′ E.

Maitea or Mehetia, is the easternmost of the Society group; 7 m. in diameter, 1597 ft. high. 17° 53′ S., 148° 05′ W.

Maitland, two islets remarkably alike, southwest from St. Andrew islands in the Admiralty group. 2° 29′ S., 147° 18′ E.

Maitre, islet between Noumea and Uen island, New Caledonia.

Maiwo or Maewo, also called Aurora, is the northeast island of the New Hebrides. It is 30 m. N-S., and 2000 ft. high. The north point is 14° 50′ S., 168° 05′ E. **12.**

Majuro or Arrowsmith was discovered by Captains Marshall and Gilbert in 1788. It consists of 33 islets on a reef 30 by 10 m. Southeast point is in 7° 05′ N., 171° 23′ E.

Makada is an inhabited islet of the Duke of York group in the Bismarck archipelago. 4° 06′ S., 152° 26′ E.

Makahaa, islet in the Biha channel leading to Tongatabu, Tongan islands. 21° 06′ 40″ S., 175° 08′ W.

Makamea, islet of Ontong Java. 5° 36′ S., 159° 21′ E.

Makane, one of the Hermit islands. 1° 35′ S., 144° 57′ E.

Makapu, islet of Mangareva.

Makaroa or Marsh, islet of Mangareva.

Makatea, Metia or Aurora, of the Paumotu archipelago, the Recreation of Roggewein who discovered it in 1712, is of uplifted coral, 230 ft. high. It is wooded, and inhabited by people who still make good kapa. North end is in 15° 49′ 35″ S., 148° 13′ 15″ W. **20.**

Makemo (Makima of Wilkes), Phillips, Koutousoff (of Bellingshausen), was discovered from the *Margaret* in 1803. It is 40 m. WNW-ESE. The west end is in 16° 26′ S., 143° 56′ W.

Makin or Pitt is the most northerly of the Gilbert islands, and is 6 m. long, and from a half to two miles wide. The northeast point is in 3° 20′ 45″ N., 172° 58′ 45″ E. **7.**

Makondranga is 1 m. by 0.5 m., and half a mile northwest from Makongai, Fiji.

Makongai is between Ovalau and Koro, Fiji. It is 2 m. by 1.5 m., and 876 ft. high. 17° 27′ S., 179° 02′ W.

Makura, 4 m. southeast from Mai, New Hebrides; 991 ft. high; 1 m. NW-SE.; 120 natives; all profess Christianity.

Mala, see Malaita of the Solomon islands.

Malaita, Solomon islands, the Mala of natives, Isla de Ramos of Gallego, Terre des Arsacides of Surville, was discovered by Hernando Enriquez of Mendaña's expedition in 1568. It is 103 m. long and 4274 ft. high. The northwest point is in 8° 19′ S., 160° 30′ E. The southeast point is in 9° 45′ S., 161° 30′ E. Natives are reputed treacherous.

Malacan or Malacal, islet of Korror, Pelew islands. 7° 19′ N., 134° 31′ 45″ E.

Malaki is off the north side of Viti levu, Fiji. Of triangular form with sides about 2 m. long, it is 755 ft. high, covered with grass and casuarina trees; inhabited. The northeast point is in 17° 16′ 10″ S., 178° 08′ 40″ E.

Malamala, a sand islet in Nandi waters off the west coast of Viti levu, Fiji.

Malapa, the largest island in Marau sound off Guadalcanar, Solomon islands. 9° 46′ S., 160° 48′ E.

Malatta, of the Exploring group, is joined to Vanua mbalavu by reef. It is 2 m. by 0.3 m., and 420 ft. high. 17° 20′ 30″ S., 181° 01′ E.

Malaupaina, the southernmost of the Three Sisters, Solomon islands. The middle one is Malau lalo, the north one Malau.

Malden or Independence was discovered by Byron July 29, 1825, on the voyage on which he brought the remains of the King and Queen of the Hawaiian islands to Honolulu. It is 4 m. in diameter, and about 30 ft. high. There are traces of a former Polynesian population in curious stone structures. It is a British possession and is worked for guano. No fresh water on the island. It was named for an officer of the *Blonde*. 4° 05′ S., 155° W.

Malebu, islet off north coast of Viti levu, Fiji.

Malekula or Mallicolo, of the New Hebrides, extends 55 m. NW-SE. by 15 m. The inhabitants are warlike but small in stature. The southwest point is in 16° 26′ S., 167° 47′ E. As will be seen by the map, the northeast and south shores are fringed by a mountain chain.

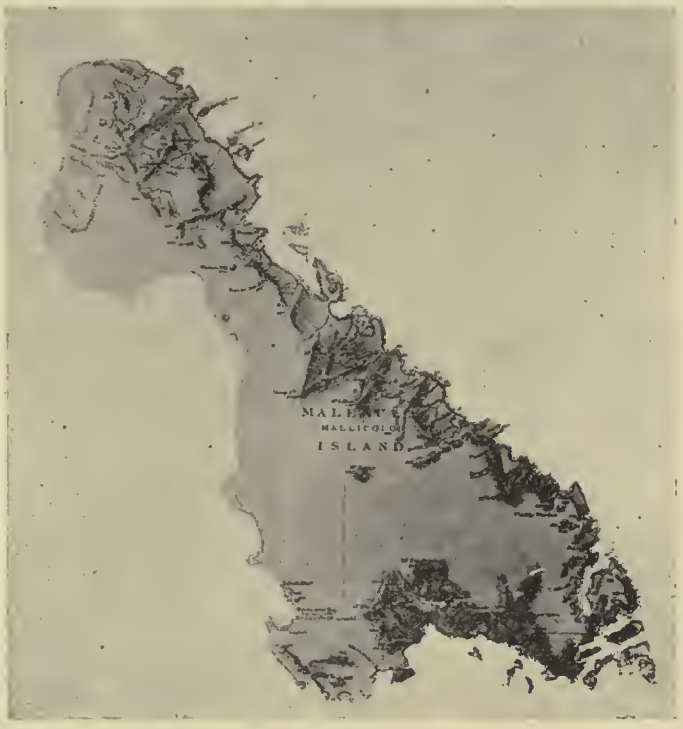


FIG. 5. MALEKULA: FROM ADMIRALTY CHART.

Malema, see Matemá or Swallow islands.

Mali is off the north coast of Vanua levu, Fiji; 350 ft. high; inhabited. 16° 20′ 54″ S., 179° 19′ 42″ E.

Malima, two islets (south one 130 ft. high) in the centre of a lagoon 1.7 m. in diameter, 6 m. N. by W. from Kanathia, Fiji. 17° 08′ 30″ S., 180° 50′ E. ⊙

Malinoa, small, low, 50 ft. high. Tongan group.

Maliu or Toulon is 6 m. off Amazon bay on the south coast of New Guinea. It is 3 m. in circumference, and 300 ft. high; covered with trees and grass. There is a large village.

Mallicolo, see Malekula, New Hebrides. The former perhaps more common on charts.

Malo or St. Bartholemew, islet off the southeast side of Espiritu Santo, New Hebrides. Natives are small in stature, but vigorous eaters of human flesh.

Maloelab, Calvert, Araktcheeff or Kaven of the Marshall islands, was discovered by Captain Gilbert June 29, 1788, and by him named Calvert. It consists of 64 islets on a reef extending 33 m. NW-SE. by 15 m. Kotzebue gives the southeast point as in 8° 29′ N., 171° 11′ E. **6.**

Malogi, islet near Tangoa anchorage, Espiritu Santo, New Hebrides.

Malolo islands, of the Hudson group, Fiji, extend over a triangle with sides of 2 m. They are inhabited and well cultivated. Malolo, Malololailai, Ngualito, Mathiu, Wadingi and Vatu mbulo, the last three mere rocks. 17° 46′ 10″ S., 177° 08′ 40″ E. ⊙

Malololailai, islet southeast from Malolo, 30 ft. high. North point 17° 46′ 30″ S., 177° 10′ 30″ E.

Malpelo, a barren rock surrounded by many islets, seen by Colnett July 1793; 1200 ft. high. 4° 03′ N., 81° 36′ W.

Malukawa, north from Saibai, New Guinea. 9° 18′ S., 142° 48′ E.

Malume group consists of Puna and Nugarba, Bismarck archipelago. 3° 13′ S., 154° 26′ E.

Mamanutha, islands in the Hudson group, Fiji. 18° 52′ S., 178° 26′ E.⊙ There are 13 islands divided into two groups: M. i thake (windward), Mana, Matamanoa, Nantanivono, Tavua, inhabited. Mondriki, Monu, Yanua, Tokoriki, M. i ira (leeward), Yavurimba, Kandomo, Vanua levu, Na vandra, Eori, all uninhabited. **14.**

Mambualau, low islet on reef of Viti levu, Fiji. 17° 57′ 10″ S., 178° 48′ 15″ E.⊙

Maméré, islet within N'Goe reef on the southeast side of New Caledonia.

Man, see Uatom, Bismarck archipelago. **10.**

Man-of-war Rock, see Gardner south of the Hawaiian islands.

Mana, uninhabited islet of Mamanutha i thake group, Fiji.

Manahiki, a spelling of Monahiki or Humphrey. **19.**

Manaka, two groups in the Paumotu archipelago discovered by Cook in 1773. They each have lagoons and are very near each other. The north one is called Marokau, the south one Manaka. More than 20 islets. The south point is in 18° 13′ 28″ S., 142° 10′ W. **21.**

Mananua, islet on the southeast coast of New Guinea, 130 ft. high; east from Taurama.

Manaswari, islet of Port Dorei on the north coast of New Guinea. There is a Mission station here. 0° 55′ S., 134° 08′ E.

Mando or Ile aux Canards, islet at the south end of New Caledonia..

Mandoliana is south from Florida, Solomon islands. 9° 11′ 30″ S., 160° 15′ 30″ E.

Manduiloto, one of the islets of Sikaiana or Stewart island. 8° 23′ S., 162° 58′ E.±

Manevai or Direction, islet of Vanikoro, New Hebrides; small, 250 ft. high.

Mangaia, of the Hervey group, is 20 m. in circumference and 300 ft. above the sea. Discovered by Cook March 29, 1777. In 1885 it had a population of 4000 and is the centre of the Protestant Mission for the Central Pacific. The fringing reef has no entrance. The people were very skilful in carving paddles and handles of ceremonial adzes, as shown by the specimens in every museum. 21° 57′ S., 151° 07′ W.

Mangareva, Peard or Gambier, a coral reef with five small volcanic islands and many islets, discovered by Captain Wilson in the *Duff* May 25, 1797. It was named for Admiral Lord Gambier. The group extends 4 m. NE-SW., and there are three passages into the lagoon. Mt. Duff is 1315 ft. high. In 1880 the population was about 1000. Mangareva, Akamaru or Wainwright, Aukena or Elson, Taravai or Belcher, Agakauitai, Makaroa or Marsh, Kamaka or Collie, Manui, Makapu. Mangareva is an important station of the Roman Catholic Mission. 23° 08′ S., 134° 55′ 30″ W. **22.**

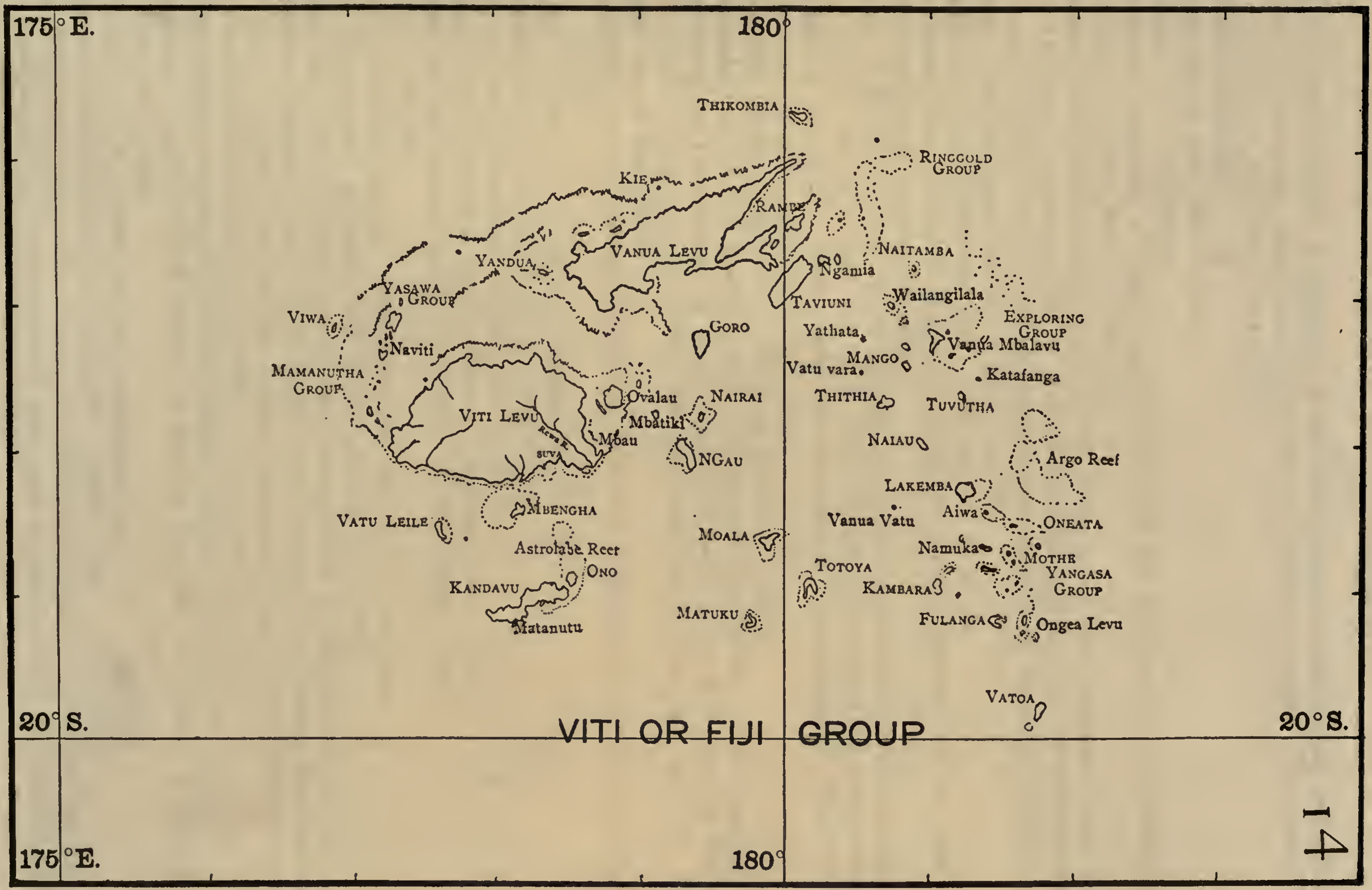
Mango (Mago), Fiji, is 18 m. NNE. from Thithia, 3×2 m., and 670 ft. high; water only from wells. It is the property of English colonists. 17° 27′ 30″ S., 180° 53′ 30″ E.⊙

Mangorongoro, see Tongareva or Penrhyn.

Mangrove, low island of Fiji. 17° 50′ 30″ S., 177° 21′ E.⊙

Mangs or Manjas, see Urracas of the Marianas.

Manicolo, a name of Vanikoro, New Hebrides. **12.**


175° E.
180°
20° S.
20° S.
175° E.
180°
14
VITI OR FIJI GROUP
THIKOMBIA
RINGGOLD GROUP
KIE
RAMBE
VANUA LEVU
NAITAMBA
Ngamia
YANDUA
YASAWA GROUP
VIWA
Naviti
MAMANUTHA GROUP
TAVIUNI
Wailangilala
EXPLORING GROUP
Vanua Mbalavu
Yathata
GORO
MANGO
Vatu vara
Katafanga
THITHIA
TUVUTHA
Ovalau
NAIRAI
VITI LEVU
Mbatiki
Rewa R.
SUVA
Moau
NGAU
NAIAU
Argo Reef
LAKEMBA
Aiwa
ONEATA
Vanua Vatu
MBENGHA
VATU LEILE
MOALA
Astrolabe Reef
ONO
Namuka
MOTHE
YANGASA GROUP
TOTOYA
KAMBARA
KANDAVU
Matanutu
MATUKU
FULANGA
Ongea Levu
VATOA

Manihi, of the Paumotu archipelago, is the Waterlandt of Lemaire and Schouten, 1616; 13 m. NE-SW. Inhabitants make curiously elaborate canoes. The east end is in 14° 24′ S., 145° 52′ W. **21.**(20)

Manihiki, see Monahiki. **19.**

Manim, islet of Jobi, New Guinea.

Manima, islet of Tongatabu.

Manoba or Elisabeth, a thickly wooded island off the northeast point of Malaita, Solomon islands. 8° 20′ S., 160° 43′ E.

Manono, of the Samoan islands, is on the reef of Upolu. It has a surface of 3.3 sq. m.; 500 ft. high. 13° 50′ S., 172° 01′ E. Formerly the political centre of the feudal aristocracy; at present a sort of naval dockyard where a large double war-canoe is kept. **15.**

Manor, of the Schouten islands. 0° 50′ S., 136° E.

Manose, one of the Hermit islands. 1° 34′ S., 144° 55′ E. **8.**

Mantapeiti (leeward) and Mantapeitak (windward), islets of Ponapé, Caroline islands.

Manton, see Mokil, Caroline islands.

Manua, of the American part of the Samoan group, covers 20 sq. m. and rises to a height of 2500 ft. 14° 15′ S., 169° 26′ 30″ W.⊙ The traditionary cradle of the Samoan race.

Manuae, a barren islet on the same reef with Anotu; few inhabitants. Discovered by Cook in 1773. Hervey group. **23.**

Manuatha, off the north coast of Viti levu, Fiji; 400 ft. high.

Manubada, islet off Port Moresby on the south coast of New Guinea. 9° 32′ S., 147° 10′ E.

Manuhangi or Cumberland, of the Paumotu archipelago, was discovered by Wallis in 1767. It is low but inhabited. The west end is in 19° 12′ S., 141° 19′ 06″ W. **21.**

Manui, islet of Mangareva.

Manumanu, at the mouth of the Vanapa river in Redscar bay, New Guinea. 9° 09′ S., 146° 54′ E.

Maora, islet on the east reef of Huaheine, Society islands.

Maoraha, islet of San Cristóval, Solomon islands.

Map, islet on northern side of Yap, Caroline islands.

Mapas, islet on the south coast of Murua, Kiriwina group. 9° 09′ S., 152° 45′ E.

Mapeti, in Aifa pass on the coast of Tahiti, Society islands. **20.**

Mapia, see Pegan.

Mara, islet in Muendo bay on the southwest side of New Caledonia.

Maragili, a name of Kosmann islet in the Louisiade archipelago.

Marai with Taliwewai forms Stuers islets; low, wooded, in the Louisiade archipelago.

Maraki or Matthew, of the Gilbert islands, was discovered by Captains Marshall and Gilbert in 1788; 5×2.5 m., the lagoon shores almost entirely covered with vegetation. Population was 1900 in 1886. 2° N., 173° 25′ E. **7.**

Maramasiki is southeast of Malaita, Solomon islands. 9° 32′ S., 161° 25′ E.⊙

Marambo, a small, wooded island 7 m. E. by N. from the south point of Kambara, Fiji; 160 ft. high.

Marceau, islet in Arembo bay on the southwest side of New Caledonia.

Marchand, see Nukuhiva of the Marquesas islands. **23.**

Marcken, incorrectly on the charts as Marqueen, was named by Lemaire from a supposed resemblance to the island of that name in the Zuyder Zee. Captain Mortlock saw this group in 1795. It is supposed to be the Cocos of Wilkinson, 1790, and it has been called Massacre because here a crew was cut off in 1830. There are 13 low, coral islands on a reef 10 m. in diameter. The south islet is the largest and inhabited. 4° 45′ S., 157° E.

Marcus, barren island in 23° 10′ N., 154° E. Seized by Japan in 1899 in anticipation of a cable station.

Maré or Neugone, the Britannia of Burroughs (1842), was discovered by D'Urville June 15, 1827. It is the principal island of the Loyalty group, and has a population of about 2000. The northeast point is in 21° 29′ 30″ S., 168° 06′ E.

Maretiri, see Bass islands.

Margaret, an inhabited island near Sideia on the southeast coast of New Guinea; 1.5 m. E-W., 0.5 m. N-S.; 500 ft. high. 10° 41′ S., 150° 54′ E.

Margaret, a name given to Nukutipipi by Turnbull from his ship *Margaret*.

Margaretta, see Namo of the Marshall islands.

Margaritana (La), an island discovered by Quirós April 26, 1606, 12 leagues from the San Marcos of de Leza. Perhaps one of the Banks islands. 13° S.

Maria, see Mœrenhout of the Paumotu archipelago. **22.**

Maria, an island on the east coast of Tasmania, 2750 ft. high, was a government reserve for the last of the Tasmanians. 42° 40′ S., 148° E.

Maria, see Peru or Francis of the Gilbert islands. **7.**

Marianas or Ladrone. Although Magalhâes first discovered this group March 6, 1521, his name "Islas de las velas latinas" was soon superseded by that of Ladrones; and in 1668 they were officially named Marianas in honor of Maria Anna of Austria, widow of Philip IV. of Spain. The islands of the group arranged from south to north are as follows:

NAMES.	EXTENT.	HEIGHT.	POPULATION.	LATITUDE NORTH.	LONGITUDE EAST.
Guam	29 m. long.	659	7000	13° 14′ 00″	144° 44′ 00″
Rota, Zarpane, Luta	12 by 5.5.	800		14 08	145 10
Aguijan	3 by 2.			14 53 30	145 30
Tinian, Bona Vista	10 by 4.5.		250	14 59 22	145 36 20
Saipan, Seypan	14 m. long.	1000	700	15 08 30	145 44
Farallon de Medinilla	2 m. long.	59		15 29 20	146
Anatajan	5 by 1.5.	High.		16 20	145 40
Sariguan	1.5 m. diameter.			16 41	145 47
Farallon de Torres, Zelandia				16 51	145 50
Guguan	2.5 by 1.			17 16 30	145 50 15
Almagan	2.2 by 1.5.	2318		17 34	145 51
Pagan, Pagon	8 by 2.5.	900		18 07	145 52
Agrigan, Grigan	6 by 2.5.	1809		18 43 20	145 41 45
Asuncion	1 m. diameter.	2848		19 45	145 29
Urracas	2.5 m. diameter.			20 06 35	145 20
Farallon de Pajaros, Guy	1.2 m. diameter.	1039		20 33	144 48 30

The primitive *Chamorros* have left memorials in remarkable stone columns on Tinian and Guam. These are, according to Lieutenant Mortimer, 5 ft. 4 in. broad at the base, 14 ft. high, and surmounted by hemispheres of stone 5 ft. 10 in. in diameter. As the group is situated at about the place where the northeast trades cease and the monsoons meet the rainfall is almost continuous, and atmospheric disturbances attain to the force of hurricanes. Earthquakes, as might be expected in a country wholly volcanic, are common though not very severe. At the present writing it is understood that Spain has sold the group to Germany since the acquisition of Guam by the United States at the end of the Spanish-American war.

Marière or Pulo Marière, also called Warren Hastings, was discovered by Captain Hutchinson September, 1761. It is 2 m. N-S. by 1 m. E-W., and inhabited. 5° 45′ S., 132° 28′ E.

Marina, a name of Espiritu Santo, New Hebrides, used by the Banks islanders. In Maewo and Oba it is called Marino.

Marion, see Tupua of the Society islands.

Marire, islet of Espiritu Santo, New Hebrides.

Markham, see Bagiagia, a reef island in Moresby strait.

Maro reef was discovered by Captain Allen of the American whaler *Malo* in 1820. About 35 m. in circumference; no land; breakers only. Northwest point is in 25° 31′ N., 170° 37′ 33″ W.

Marokau, Dawhaida or Ravahere was discovered by Captain Cook in 1773. There is great uncertainty about this group, not as to its existence, but whether there are not two distinct reefs, besides the neighboring one of Manaka. I have followed the charts, but the sailing directions contradict these and there is no competent exploration to determine. North point is in 17° 55′ S., 142° 17′ W.

Maronu, islets in Uailu passage on the northeast side of New Caledonia.

Maroupo, a name of Angatau of the Paumotu archipelago.

Marovo, New Georgia or Rubiana, of the Solomon islands, consists of three principal islands and many islets, all of recent volcanic origin, some rising to a height of 2500 ft. Inhabitants are dark, sturdy cannibals. The northeast point is in 7° 57′ S., 157° 31′ E.

Marqueen of the charts should be Marcken as named by Lemaire.

Marquesas, Les Marquises, were discovered July 21, 1595, by Mendaña so far as the southeast group is concerned. The northern group by Marchand in 1791, and by Ingraham about the same time. They were named in memory of Don Garcia Hurtado de Mendoza, Marqués de Cañete, Viceroy of Peru and patron of Mendaña's second voyage. They were taken by France in 1842. The native inhabitants have diminished from the supposed number of 75,000 to less than 3500. They were of beautiful form, finely tatued, and hungry cannibals. Now they are perishing with leprosy, syphilis and other evils. Devoted Hawaiian missionaries have labored with them for forty years. The islands of the group may be tabulated as follows:

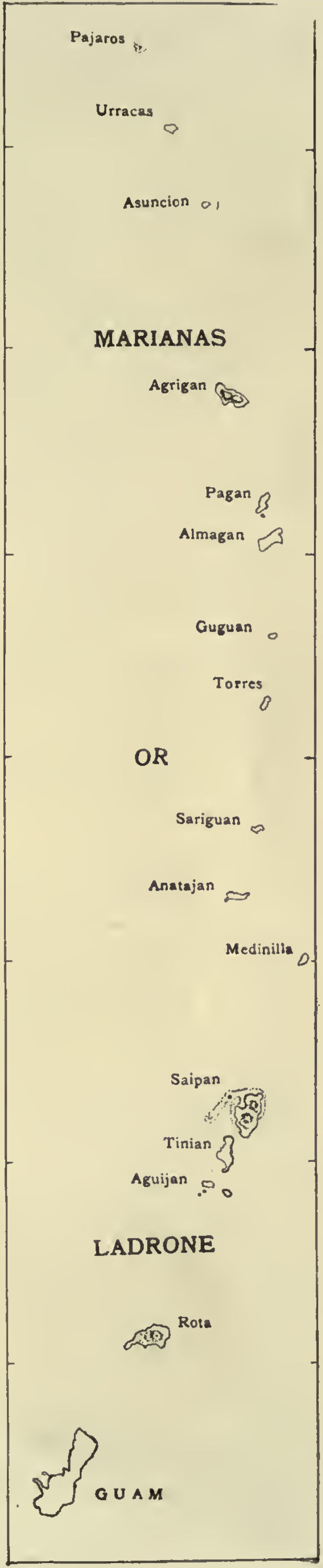


FIG. 6.

MARQUESAS ISLANDS.

Native Name.	Chart Name.	Discoverer.	Extent in Miles.	Height in Feet.	Latitude South.	Longitude West.
Washington Group:						
Hatutu	Fatuuhu, Hancock.	Ingraham, 1791.	4 by 1.	1389	7° 57′ 00″	140° 34′ 00″
	Chanal.	Marchand, 1791.				
	Laugdon.	Roberts, 1793.				
	Nexsen.	Fanning, 1798.				
Eiao	Hiau.	Marchand, 1791.	6 by 3.	2000	8 02	140 49
	Knox.	Ingraham, 1791.				
	Freemantle.	Roberts, 1793.				
	Roberts.	Hergest, 1792.				
	New York.	Fanning, 1798.				
Motuiti	Franklin.	Ingraham, 1791.	Rock.	720	8 43	140 37
	Blake.	Roberts, 1793.				
	Hergest, Two Brothers.					
Nukuhiva	Federal.	Ingraham, 1791.	14 by 10.	4000 ?	8 54 03	140 06 40
	Sir Henry Martin.	Hergest, 1792.				
	Ile Baux.	Marchand, 1791.				
	Adams.	Roberts, 1793.				
Huahuna	Washington.	Ingraham, 1791.	7.5 by 5.	2430	8 55	139 34
	Massachusetts.	Roberts, 1793.				
	Riou.	Hergest, 1792.				
	Ouahouka, Roahouga.					
Huapu	Adams.	Ingraham, 1791.	9 by 5.	4042	9 24	140 05
	Washington.	Roberts, 1793.				
	Marchand.					
	Ouapou, Roapoua.					
Mendana Group:						
Fatuhuku	Hood.	Cook, 1774.	Rock.	1180	9 26	138 56
	Fatou-honkou.					
	Fetuku.					
Hivaoa	La Dominica.	Mendaña, 1595.	22 by 6.	1280	9 47	138 47
	Ohiva-Hoa.	D'Urville.		2820		
Tahuata	Santa Cristina.	Mendaña, 1595.	8.5 by 4.	3280	9 56	139 06
Motane	San Pedro.	Mendaña, 1595.	5 by 2.	1640	10 00	138 50
	Mohotane.					
Fatuhiva	Santa Magdalina.	Mendaña, 1595.	8 by 4.	3675	10 24	138 40

Marsh, see Makaroa, islet of Mangareva.
Marshall, see Tarawa, of the Gilbert group.

MARSHALL ISLANDS.

Native Name.	Chart Name.	Number of Islets.	Discoverer.
Ratack Group:			
Knox		10	
Mille	Mulgrave.		Captain Marshall, 1788.
Arno	Daniel, Pedder.		Marshall & Gilbert.
Majuro	Arrowsmith.	33	Marshall & Gilbert.
Aurh	Ibetson, Traversey.	32	Kotzebue.
Maloelab	Calvert, Kaven, Araktcheeff.	64	
Erikub	Bishop Junction, Egerup.		
Wotje	Romanzow.	65	
Likieb	Count Heiden, Legiep.	44	Kotzebue, 1817.
Jemu	Temo, Steep-to.	1	
Aliko	Tindal, Watts.		
Mladi	Medjit, New Year.		Kotzebue, 1817.
Taka	Suvarov.		
Utirik	Kutusov, Button.		
Bikar	Dawson.	3	
Taongi	Smyth, Gaspar Rico.		
Ralick Group (West):			
Ebon	Boston, Covell.	21	G. Ray, 1824.
Namorik	Baring.	3	Captain Bond, 1792.
Kili	Hunter.	1	Captain Dennet.
Jaluit	Bonham.	50	
Ailinglap	Odin, Elmore, Helut.	21	
Jabwut		1	
Nemu	Namu, Musquillo.		Captain Bond, 1792.
Lih	Tebut, Princessa.	1	
Ujne	Katherine.		
Lae	Brown.	14	Captain Brown, 1858.
Kwndjalin	Menschikoff.		
Wotto	Shanz.		Captain Shanz, 1835.
Ailinginae			
Rongelap	Pescadore.		Captain Wallis, 1767.
Rongerik	Rimski-Korsakoff, Radokala.	48	Kotzebue, 1817.
Bikini	Eschscholtz.	10	
Eniwetok	Brown.	40	Captain T. Butler, 1794.
Ujelong	Arecifos, Providence, Casobos.	13	

Marshall Islands, an extensive group between the Caroline and Gilbert islands, probably visited by Alvaro de Saavedra in 1529. Captain Wallis, in 1767, was at Rongerik, and in 1788 Captains Marshall and Gilbert explored this group more thoroughly than any previous navigators. In February, 1886, Germany annexed the group and has since endeavored to colonize it, but without much success.

Marshall Bennett, three small, high, uninhabited islands discovered by Captain Hunter of the *Marshall Bennett* in 1836. 8° 49′ s., 151° 56′ e.

Martin, on the northeast coast of Bougainville, Solomon islands. 6° 11′ s., 155° 35′ e.

Martin, see Nganati of the Paumotu archipelago.

Martin de Mayorga, name given by Maurelle in 1781 to the Tongan group.

Marua or Maupiti of the Society islands. It is 6 m. in circumference and surrounded by a reef on which are several palm-covered islets; volcanic, 800 ft. high. Population, 300. 16° 26′ s., 152° 12′ w.⊙ **20.**

Marutea or Lord Hood, in the Paumotu archipelago, was discovered in 1791 by Captain Edwards in H. M. S. *Pandora*. The atoll extends 11 m. e-w., and 7 m. n-s., It is uninhabited and the lagoon is closed. 21° 31′ s., 135° 38′ w. **22.**

Marutea or Furneaux, a low, inhabited atoll discovered by Cook in 1773. West end in 16° 54′ s., 143° 20′ w.

Mary Balcout of Wilkes is Canton in the Phœnix group.

Mas-a-fuera is 92 m. west from Juan Fernandez, 8 m. n-s., 5 m. e-w., 4000 ft. high. 33° 46′ s., 80° 46′ w.

Masamasa is 575 ft. high, in Bougainville strait, Solomon islands. 6° 47′ s., 156° 09′ e.

Mas-a-tierra, a name of Juan Fernandez.

Maskelyne, group of low islands, thickly peopled, off the southeast coast of Malekula, New Hebrides. Sakau is the largest; others are Kolivia and Kiwyo.

Masmapi, islet in Dorei bay on the north coast of New Guinea.

Massachusetts of Roberts is Huahuna of the Marquesas islands.

Massacre, a name given to Marcken of Lemaire.

Massaramcoer or Bramble Cay, a sandbank 10 ft. high at the northeast boundary of Queensland Colony. 9° 07′ 50″ s., 143° 52′ 10″ e.

Masse of Roberts is Eiao of the Marquesas islands.

Matador, of the Caroline islands was discovered in 1876. It consists of 15 islets on an atoll, some of them inhabited. 1° 30′ n., 157° 05′ e.

Matahiva or Lazareff, of the Paumotu archipelago, a low, wooded island discovered by Bellingshausen in 1820. West end is in 14° 53′ 30″ s., 148° 43′ 30″ w.

Mataiwa, a form of Matahiva.

Mata kawa, of the Talbot group is opposite the mouth of the Wassi kussa river of New Guinea. 9° 16′ s., 142° 12′ e.

Matamanoa, uninhabited islet of the Mamanutha i thake group, Fiji.

Matangi, islet of Fakaafo or Bowditch. 9° 22′ s., 171° 12′ w.

Matangi, a small, unhabited island, 1 m. long, crescent-shape. Fiji.

Matamuku, islet south of Kandavu, Fiji; 700 ft. high. 19° 10′ 20″ s., 178° 06′ 40″ e.

Mataou or East Sentinel, islet at entrance to Comptroller bay, Nukuhiva, Marquesas islands.

Mataso or Two Hill of the New Hebrides, is about 19 m. north from Nguna; 1650 ft. high. Natives friendly. Mission station. 17° 18′ S., 168° 23′ E.

Matathoni levu, of Yasawa group, Fiji, 2 m. N-S. North point in 16° 57′ S., 178° 18′ 45″ E.

Matelotas, see Ngoli of the Caroline islands.

Matemá, Swallow or Reef, comprise Lomlom, Nufiluli, Pileni, Nukapu, Anologo, Nibanga, Panavi, Nupani, Fenuloa. The group lies between 10° 04′–10° 22′ S., 165° 39′–166° 19′ E. British protectorate proclaimed August 18, 1898. **12.**

Materbert, small, rocky, off Gazelle peninsula of New Britain, Bismarck archipelago.

Materhert, of the Bismarck archipelago, is 0.2 m. long. 4° 17′ S., 151° 32′ E.

Matthias, a mountainous and wooded islet northwest from New Hanover. 1° 32′ S.

Mathieu, islet of Malolo group, Fiji.

Mathuata (Macuata), off north coast of Vanua levu, Fiji; 1.5 m. long, 500 ft. high ±.

Matilda, see Mururoa of the Paumotu archipelago. **22.**

Matin, islet of Marovo or New Georgia, Solomon islands. 8° 25′ S., 158° 05′ E.

Mato, islet 5 m. south from Uen island.

Matthew, discovered by Captain Gilbert in 1788; 465 ft. high. 22° 20′ 12″ S., 171° 20′ 30″ E.

Matthew, islet in Uitoe passage on the southwest side of New Caledonia.

Matthew, a basaltic cone southeast from New Caledonia.

Matthew, see Maraki of the Gilbert islands.

Mattinson, see Sophia of the Ellice group (existence uncertain).

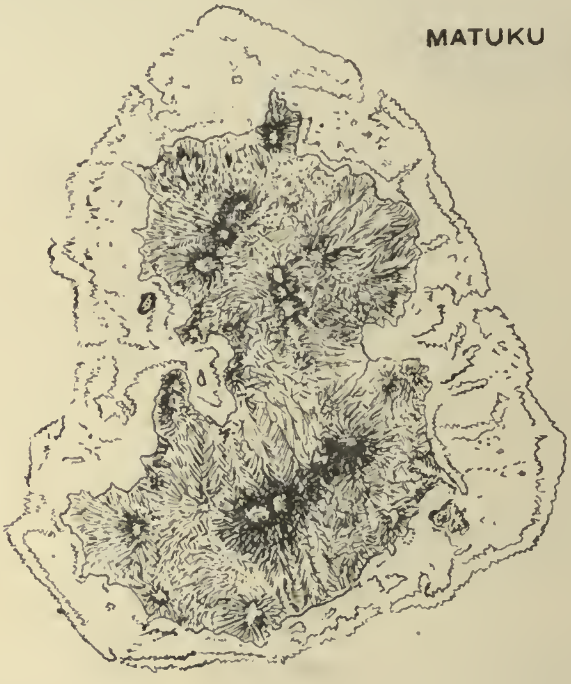


FIG. 7.

Matty, or Maty, was discovered by Carteret September 19, 1767, and named for his friend Dr. Maty. It is 6 m. square, flat, and thickly peopled by a fine light colored race of uncertain relationship. Their implements are peculiar and exceedingly interesting. 1° 45′ S., 142° 47′ E. Probably this is Tiger of the charts. **8.**

Matu avi, one of the Stewart group. 8° 23′ S., 162° 58′ E.

Matukanaputa, small and rocky island off Gazelle peninsula of New Britain; 60 ft. high. 4° 13′ S., 151° 32′ E.

Matuku, in Fiji, is a good example of a high (1262 ft.) island with a fringing reef. The map is copied from the survey given in the *Challenger* Report. Matuku is 4.5 m. N-S. Carr's harbor on the west side is the best in the group. The volcanic peaks add great beauty to the scenery. The south point is in 19° 13′ 30″ S., 179° 44′ E. Population in 1880 was 712.

Matupi, a small volcanic island in Blanche bay, New Britain. 4° 13′ S., 152° 10′ E.

Maturei Vavao or Estancélin of the Paumotu archipelago, is the southeastern of the Actæon group. It is 6 m. NW-SE. Northwest point is in 21° 27′ S., 136° 28′ W. **22.**

Maty was discovered by Carteret September 19, 1767, and named for his friend Dr. Maty. It is 6 m. square, flat and thickly peopled by a fine light colored race of uncertain relationship. Their implements are peculiar and exceedingly interesting. 1° 45′ S., 142° 47′ E. Probably this is Tiger of the charts. **8.**

Mau, Hinchinbrook or Vele of the New Hebrides, is a volcanic cone 2 m. in diameter, and 1493 ft. high. The crater is filled with vegetation. Natives peaceable.

Maui, of the Hawaiian group, is the second in size, measuring 466,000 acres. It is 43 m. long, divided by a low isthmus into East and West Maui. The former is the grand cone (10,032 ft. high) capped by the crater of Haleakala, which is more than 2000 ft. deep and 20 m. in circuit. The latter, also an ancient volcano, is lower (5820 ft.) and its flanks are deeply cut into picturesque valleys. Population in 1896 was 17,726. The north side of the isthmus is in 20° 54′ 15″ N., 156° 29′ W. **1.**

Mauiki, of the Hervey group, is about 6 m. in circumference, fertile, has no lagoon nor any opening in the fringing reef. 20° 07′ S., 157° 22′ W. **23.**

Maupiti, see Marua of the Society islands.

Mausoleum, a sugar-loaf-shaped hill 650 ft. high, between New Ireland and New Hanover in the Bismarck archipelago. 2° 44′ S., 150° 32′ E.

Mauti of Byron is Mauiki of the Hervey group.

Mavuva, islet of Mathuata on the north coast of Vanua levu, Fiji.

Mawtu, islet of Fakaafo or Bowditch. 9° 25′ 30″ S., 171° 12′ 30″ W.

May, see Yakuve, Fiji. 18° 51′ 45″ S., 178° 27′ E.⊙

Mayon, see Marua or Woodlark.

Mayor, see Tuhoua, New Zealand.

Mba, islet of Uitoe passage, southwest side of New Caledonia.

Mbatiki (Batiki), Fiji, near the centre of the group, is 2 m. in diameter and 609 ft. high. Population in 1880, 342. 17° 46′ S., 179° 10′ E.

Mbau (Bau), Fiji, small island east from Viti levu, 80 ft. high. 17° 59′ 16″ S., 178° 39′ 20″ E.

Mbe, islet in Port Uitoe, southwest side of New Caledonia.

Mbenau, islet on the south coast of Vanua levu, Fiji, 100 yds. in diameter, covered with palms.

Mbenga (Beqa), is 5×3 m. and rises to 1400 ft. 18° 22′ 15″ S., 178° 07′ 30″ E.

Mboa, islet in Uitoe passage on the southwest side of New Caledonia.

Mbu, islet in Port Uitoe, on the southwest side of New Caledonia.

Mbua, islet 35 ft. high on the shore reef at the southeast end of Nananu i thake, Fiji.

Mbuimbani, a conical island 430 ft. high in Nanuku passage, Fiji; planted with coconut trees.

Mbulia (Bulia), 460 ft. high, inhabited, in Kandavu group, Fiji. 18° 46′ S., 178° 33′ E.

Mbulo, a small island off Cape Pitt of Marovo, Solomon islands; about 800 ft. high. 8° 45′ S., 158° 15′ E.

McAskill, see Tugulu; also Pingelap.

McKean, of the Phœnix group, was discovered by Wilkes in 1840. It is low, 0.7×0.5 m. 3° 36′ S., 174° 16′ W.⊙ **17.**

Meaburn, islet of Caroline islands.

Meama, islet of the Tongan group.

Meck, islet of Kwadjalin, Marshall islands.

Medjit, see Miadi of the Marshall islands. **6.**

Meduro, see Majuro of the Marshall islands.

Mefur, a low, uninhabited island 10 m. long on the north coast of New Guinea.

Mehetia, a form of Maitea of the Society islands. **20.**

Meiwa, islet east from Yeina in the Louisiade archipelago. 11° 22′ S., 153° 30′ E.

Mej, islet on the west coast of Ebon, Marshall islands. 4° 36′ 30″ N., 168° 41′ 30″ E.

Mekinley, in China strait, 200 ft. high. 10° 33′ S., 150° 43′ 35″ E.

Mekundranga, a low island 1.2×0.2 m. Fiji. 17° 24′ 16″ S., 178° 58′ 50″ E.⊙

Melbourne, see Tenarunga, Paumotu archipelago. 21° 22′ S., 136° 34′ W.

Meli, a low, inhabited islet of Faté, New Hebrides.

Mellim, islet on the southeast coast of Marua of the Trobriand group. 9° 09′ S., 152° 57′ E.

Mellu, islets of Kwadjalin of the Marshall islands.

Melville, see Hikueru of the Paumotu archipelago. **21.**

Mende, islet on the east side of Willaumez peninsula, New Britain.

Mentschikow, see Kwadjalin, Marshall islands.

Menu (La), islet of Tasiko, New Hebrides.

Meoko, better Mioko, inhabited islet of the Duke of York group, New Ireland.

Meosnum, in Geelvink bay on the north coast of New Guinea; 12–14 m. long, 1 m. wide. 1° 29′ S., 135° 14′ E.

Mer or Murray, with Dauer and Waier within one reef. Inhabitants Papuan. 9° 54′ S., 144° 02′ E.

Meralaba, see Merlav of the New Hebrides.

Merat, 3–4 m. in circumference, on the New Guinea coast.

Mercury or D'Haussez, on the coast of New Zealand. 36° 40′ S., 175° 45′ E.

Merig or St. Claire, is between Merlav and Gaua of the Banks islands; 200 ft. high. Population, 15–20. 14° 17′ S., 167° 50′ E.

Merite, of the French islands, Bismarck archipelago, is about 5 m. E-W by 4 m., and 2150 ft. high; near New Britain. 4° 56′ S., 149° 07′ E.

Merlav, Meralaba or Star Peak of the New Hebrides, is 2900 ft. high. Population about 700. A Mission station. 14° 29′ S., 167° 59′ E.

Messum, a raised coral island of the Louisiade archipelago.

Meta, islet on the north coast of New Guinea, which with Gressien forms Dallmann harbor.

Metia, see Makatea, Paumotu archipelago. **20.**

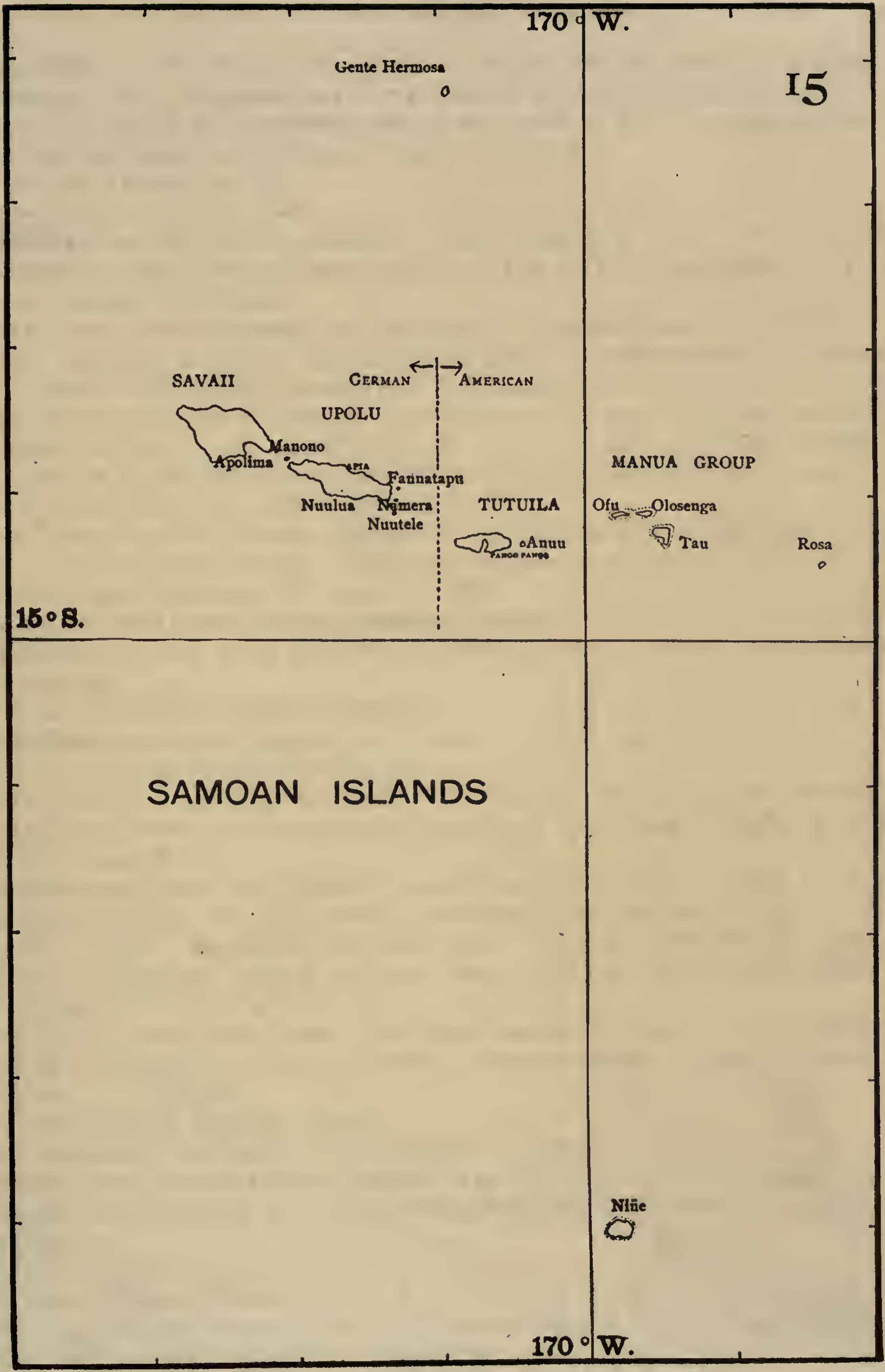
Metis, of the Tongan group, was first noticed in 1875 by *Metis* 75 m. from Falcon island. It was 29 ft. high; after an eruption it rose to 150 ft.; now a shoal bank. 19° 11′ S., 174° 49′ W.

Metoma, between Middle and North of the Torres group, is about 450 ft. high. 1.5 × 0.7 m.

Mewadi, islet north from Duau, D'Entrecasteaux group. 9° 50′ S., 150° 55′ E.

Mewstone, see Moturina of the Louisiade archipelago.

Meyer, off the east coast of Raoul, Kermadec islands.


170° W.
Gente Hermosa
15
SAVAII
GERMAN
AMERICAN
UPOLU
Manono
Apolima
APIA
Fanuatapu
Nuulua
Namera
Nuutele
TUTUILA
MANUA GROUP
Ofu
Olosenga
Anuu
PANGO PANGO
Tau
Rosa
15° S.
SAMOAN ISLANDS
Niue
170° W.

Miadi, Medjit or New Year of the Marshall islands, was discovered by Kotzebue, January 1, 1817. The atoll is 3 m. N-S., and 0.7 m. wide. 10° 17′ 30″ N., 170° 55′ E.

Mibu, low, wooded, 11 m. in circumference, at the mouth of Fly river, separated by a narrow creek from the mainland. 8° 43′ S., 143° 23′ E.

Michaelov, see Tuvana i ra, Fiji.

Middle, see Tegua in China strait.

Middleburgh, on the New Guinea coast. 0° 24′ S., 132° 10′ E.

Middleburgh, a name given by Tasman in 1643 to Eua of the Tongan islands.

Midge, see Abaura, New Guinea.

Midway, of the Hawaiian group, was discovered by Captain Brooks of the *Gambia* in 1859. He took possession for the United States. It was surveyed by Captain W. Reynolds (afterwards Admiral) in U. S. S. *Lackawanna* in 1867. Reef is 18 m. in circumference, with an entrance to the lagoon on the west. There are two islets, Eastern and Sand. 28° 12′ 22″ N., 177° 22′ 20″ W. It has (1900) been carefully resurveyed by the officers and men of the U. S. *Iroquois*, and many soundings were made to facilitate its use as a cable station.

Mille or Mulgrave, of the Marshall islands, is a chain of atolls 30 m. long; discovered by Captain Marshall in 1788. The southwest point is in 6° 09′ N., 171° 30′ E.

Mills, one of the Tiri islands off Vanua levu, Fiji.

Milne, off southeast coast of Raoul, Kermadec islands.

Miloradowitch, a name given by Bellingshausen in 1819 to Faaite of the Paumotu archipelago.

Minerva, see Pukahuha, Paumotu archipelago.

Miniminiahura is north of Saibai, New Guinea. 9° 17′ S., 142° 45′ E.

Minto, see Tenarunga of the Actæon group.

Mioko or Meoko, is an inhabited islet of the Duke of York group in the Bismarck archipelago, where the German protectorate was proclaimed November 3, 1884. 4° 13′ S., 152° 28′ E.

Mioskaroar, small, low, thickly wooded, on north coast of New Guinea. 0° 18′ S., 135° 03′ E.

Misima or St. Aignan of the Louisiade archipelago, is 21.5 m. E-W., 3–4 m. N-S., and 3500± ft. high. Population, in 1890, 3000; a mixture of Malay and Papuan stock; head-hunters, who have many canoes. Alluvial gold has been found. West cape 10° 38′ S., 152° 31′ E. **9.**

Misool is 50 m. north from Ceram; 50×20 m., mountainous and wooded. Interior people are Papuan, on the coast much mixed with Malay. Subject to Sultan of Tidore. 2° S., 130° E.

Misore or Mysore, see Schouten islands.

Mitchell, a name of Nukulaelae of the Ellice group. **16.**

Mitiéro or Mitiaro, of the Hervey group, is 10 m. in circumference, very barren; deep lagoon with no opening in the surrounding reef. Population about 275. 19° 49′ S., 157° 43′ W.

Mitre, see Fatáka in 11° 55′ S., 170° 10′ E.

Moai, islet of Ifalik, Caroline islands. **3.**

Moala, high, volcanic island of Fiji; 5×7 m., and 1535 ft. high. Population about 600. South point is in 18° 41′ S., 179° 53′ E.

Moali, Muli or Badencu, islet southwest of Uea, Loyalty islands. There is only a boat passage between Moali and Uea.

Modu manu (for *Moku manu*), old spelling of the Hawaiian name of Nihoa or Bird island.

Moe, islet of Pavuvu, Solomon islands.

Möller, see Amanu of the Paumotu archipelago.

Möller, see Laysan, Hawaiian islands. **2.**

Moerenhout or Maria, of the Paumotu archipelago, was discovered by Mr. Ebrill of the *Amphitrite* in 1832. A lagoon in centre. 21° 53′ S., 136° 20′ W.⊙ **22.**

Mofia, on the north coast of New Guinea; half a mile N-S., 200 ft. high. 0° 28′ S,, 135° 13′ E.

Mogmog, islet of Uluthi, Caroline islands. 10° 06′ N., 139° 45′ 30″ E.

Mogogha, islet off the north coast of Vanua levu, Fiji.

Moka, islet of Kia, Fiji.

Mokaluva, islet at the entrance to Port Nukulau on the southeast coast of Viti levu, Fiji.

Mokil or Duperrey or Wellington is 90 m. east from Ponapé, Caroline islands. It was discovered June 18, 1824, by Duperrey. The reef is 3 m. in diameter and has three islets, Mokil, Aoura and Ongai (According to others the names are Urak, Manton and Kalap). About 175 inhabitants. South end is in 6° 39′ N., 159° 53′ E.

Moko, islet of Pavuvu of the Russell group, Solomon islands. 9° 04′ S., 159° 07′ E.

Mokomok (Arrowroot), chief place of Uluthi or Mackenzie group, Caroline islands.

Mokor, Caroline islands, a name in Dr. L. H. Gulick's list, in 5° 41′ N., 152° 40′ E. Said not to exist.

Mokuhooniki, islet 198 ft. high, off east end of Molokai, Hawaiian group. 21° 07′ 40″ N., 156° 42′ 20″ W.

Mokulii, islet off north coast of Oahu, Hawaiian group.

Mokungai, 10 m. from Ovalau, Fiji; 3 m. N-S., 1.5 m. E-W. The north point is in 17° 24′ 16″ S., 179° 01′ E.

Molahau, in Bismarck archipelago. 3° 14′ S., 152° 28′ E.

Molard, see Ndundinc, Loyalty islands.

Mole, islet 0.7 m. long, in Purdy islands. 2° 52′ S., 146° 18′ E. **8.**

Molokai, of the Hawaiian islands, is a long, high island, 4958 ft. high, and covering 167,000 acres. Population, 2307. On the middle of the north side a tongue runs northward from the base of high precipices, and here, walled by nature from the rest of the island, is the Government leper establishment. The east end is in 21° 09′ 18′ N., 156° 42′ 45″ W.; the west end in 21° 05′ 50″ N., 157° 18′ 45″ W. **1.**

Molokini, of the Hawaiian islands, is a small, extinct crater in the channel between Maui and Kahoolawe. Uninhabited.

Monagim or Monagun, islet east of Misima, Louisiade archipelago. 10° 42′ S., 153° 53′ E.

Monahiki or Humphrey was discovered by Captain Patrickson in the *Good Hope*, 1822. British protectorate declared August 9, 1889. It is a closed lagoon reef of triangular form with the apex to the north; 6×5 m. 10° 20′ 30″ S., 161° 01′ 15″ W. Population, 400–500. **19.**

Mondriki, uninhabited islet of Mamanutha i caki group, Fiji.

Money, islet of Pavuvu, Solomon islands.

Monges (Monjes), see Anacoretas.

Mono or Treasury is about 25 m. south from Bougainville of the Solomon islands; 6.5 m. E-W., 4 m. N-S.; 1165 ft. high. 7° 21′ S., 155° 32′ E.

Monofe, of the Hermit islands. 1° 29′ S., 144° 59′ E. **8.**

Montague, see Muna, New Hebrides.

Montemont, two islands, Ia taui and Pana bobo, in the Louisiade archipelago. 11° 18′ S., 152° 18′ E.

Monteverde, see Nukuor of the Caroline islands. Discovered by Juan B. Monteverde in 1806.

Montgomery, Solomon islands, is about 15 m. E. by S.–W. by N.; uninhabited. 8° 43′ S., 157° 29′ E.

Montravel is 1 m. E-W. at the west entrance to Praslin bay, New Caledonia. Named for Captain Tardy de Montravel.

Monu, uninhabited islet of Mamanutha i caki group, Fiji.

Monuafe, islet of Tongatabu, opposite the entrance to harbor. 21° 06′ S., 175° 07′ W.

Mooa, islet on the New Guinea coast.

Moore, see Kayangle of the Pelew islands.

Moorea or Eimeo of the Society islands, rises in Oroo peak to 4045 ft. The south end is in 17° 34′ 15″ S., 150° 00′ 30″ W. **20.**

Mopelia, see Mopehá of the Society islands. **20.**

Mopehá, Lord Howe, Maura and Mobidie (of Turnbull), in the Society group, was discovered by Wallis in 1767; 10 m. N-S., 4 m. E-W. 16° 52′ S., 154° W. approx.

Mor, 5 m. from Kutu, Caroline islands; 300 inhabitants.

Moramba, Fiji, 0.5 m. in diameter, is well wooded. 18° 56′ 30″ S., 181° 09′ E.⊙

Morane or Cadmus, in the Paumotu archipelago, is a closed lagoon reef with three inhabited islets; 5 m. by 2.5 m. 23° 08′ S., 137° 20′ W.⊙ **22.**

Morata, the name of a district of Dauila, D'Entrecasteaux group, often applied to the island.

Moratau or Fergusson, of the D'Entrecasteaux group, is 30 m. E-W. by 24 m. N-S. Mt. Kilkerran is 5000 ft. high. The island is cultivated and populous. **9.**

Moresby, see Basilaki.

Moreton, off Moreton bay, Queensland; 20×5 m. North point is in 27° 06′ S., 153° 16′ E.

Moretiga, islet on the northwest coast of Isle of Pines.

Morgusaia, islet on the south coast of Shortland, Solomon islands. 7° 07′ S., 155° 46′ E.

Morileu or Hall, discovered in 1824 by English Captain Hall. The group consists of Morileu, Rua, Namorousse and six islets. Population about 100. 8° 41′ N., 152° 25′ E. **4.**

Morilug, coast of Australia. 10° 39′ S., 142° 39′ E.

Morning Star, see Udjelong of the Marshall islands.

Mornington or Wellesley, a group in the Gulf of Carpentaria. Seen by Tasman in 1644, but supposed to be part of the mainland. Named for Lord Mornington, afterward Marquis of Wellesley.

Moro, islet in Kuto bay, Isle of Pines.

Morrell, reported by Captain Morrell in 1825 as of 29° 57′ N., 174° 31′ E.; but its existence is doubtful, as it has not been seen for many years. Now expunged from Admiralty charts (1900).

Mortlock, a group of the Caroline islands discovered by Captain James Mortlock November 29, 1793. Consists of Luknnor, Satoan, Etal. Three long groups and nine islets; in all, 98 islands. **4.**

Mortlock, see Marcken.

Moseley, islet in Nares harbor, Admiralty island. Named for Henry N. Moseley, of the *Challenger* expedition.

Moso, Deception or Verao, on the northwest side of Havannah harbor, Faté, New Hebrides. There are several villages on the island, of which Moso is one. Verao means long.

Mosquito, a group on the north shore of Goodenough bay on the northeast coast of New Guinea. 9° 46′ S., 149° 53′ E.

Mota, New Hebrides, was discovered by Quirós in 1606 and called Nostra (nuestra) Señora de la Luz. Bligh called it Sugar-loaf. There are two wooded peaks about 1250 ft. high. Forty-two villages contain 2000 inhabitants, according to French authority. 13° 48′ S., 167° 40′ E. **12.**

Motane or San Pedro, of the Marquesas islands, was discovered by Mendaña July 21, 1595. Tessan calls it O-nateaya. 4.5 m. NNW-SSE; 1565 ft. high, sterile and uninhabited. 10° S., 138° 50′ W. **23.**

Motea, islet at entrance to Hamene bay, Tahaa, Society islands.

Mothe (Moce), Fiji. Wilkes calls it Motha. 2.2 m. in diameter, 590 ft. high; soil rich, island picturesque; inhabited. 18° 36′ 30″ S., 181° 26′ E.⊙

Motuhanua, islet to the eastward of Port Moresby, south coast of New Guinea. 9° 32′ S., 147° 16′ 30″ E.

Motua, islet off the north coast of Vanua levu, Fiji.

Motuagea, islet of Fakaafo or Bowditch. 9° 22′ 38″ S., 171° 13′ W.

Motuaini, islet in Styx passage, Loyalty islands.

Motuiti, islet of Fakaafo. 9° 22′ 45″ S., 171° 13′ W.

Motuiti (little island) or Franklin, sterile islet of the Marquesas. 8° 43′ S., 140° 37′ W.

Motuiti or Kennedy, New Hebrides, was discovered by Captain Simpson in the *Nautilus* in 1801. Little is known of it. 8° 36′ S., 167° 48′ E.

Motuiti, see Tubai, Society islands. **20.**

Motu Korea, in Auckland harbor, New Zealand.

Motukavata, one of the Danger group; long, 125 ft. high, uninhabited. 10° 58′ S., 165° 15′ W.

Motukoe, one of the Danger group; uninhabited, 100± ft. high. 10° 53′ S., 165° 45′ 30″ W.

Motuloa, islet of Fakaafo or Bowditch. 9° 22′ 26″ S., 171° 12′ W.

Motumau or Table, on the New Zealand coast. 43° 04′ S., 173° 10′ E.

Motunangea, islet of Fakaafo or Bowditch. 9° 24′ S., 171° 13′ W.

Motunui or West Sentinel, islet at the entrance to Taiohae harbor, Nukuhiva, Marquesas islands.

Motu ora, in Auckland harbor, New Zealand. Coconut island, in Hilo harbor, has the same name which signifies island of life.

Motupatu, in Hauraki gulf near Waiheke, New Zealand.

Moturiki is 1 m. SW. from Ovalau, Fiji; 5×1 m.; abounds in coconuts. 17° 47′ 06″ S., 178° 48′ 25″ E. (Peak.)

Moturina or Mewstone, of the Louisiade archipelago, is 3 m. ESE-WNW. by 1.7 m.; nearly 1000 ft. high; inhabited.

Motutulatula, islet of Fakaafo or Bowditch. 9° 24′ 45″ S., 171° 12′ W.

Motutunga or Adventure, atoll of the Paumotu archipelago, was discovered by Cook in 1773. The lagoon has a boat entrance at the northwest side. Occasionally inhabited for collecting coconuts and pearl-shell. 17° 04′ S., 144° 17′ W.⊙

Mouac, islet in Banaré bay on the northwest coast of New Caledonia.

Mougaone, Tongan islands.

Moulin. 18° 31′ 10″ S., 160° 52′ 14″ E. Named for one of the sailors in D'Entrecasteaux expedition.

Mound, on the Australian coast. 17° 57′ S., 146° 09′ E.

Mourilyan, on the New Guinea coast.

Mount Adolphus, group in Torres strait. 10° 38′ S., 142° 37′ E.

Mount Cornwallis, see Tauan on the southwest coast of New Guinea.

Mouse, one of the Purdy islands. 2° 55′ S., 146° 20′ E.

Mouse, islet in Fortescue strait, southeast coast of New Guinea.

Mown, islet of Kiriwina group. **9.**

Mua, islet of Egum, Kiriwina group. 9° 25′ S., 151° 58′ E. **9.**

Mudge, see Narri of the Engineer group. 10° 45′ S., 150° 18′ E.

Mugula or Dufaure is on the east side of Orangerie bay on the southeast coast of New Guinea; 3 m. N-S., 2 m. E-W.; 1662 ft. high; inhabited. 10° 29′ S., 149° 49′ E.

Muifuiva, islet near Namuka of the Tongan islands.

Mukalau, low, 0.5 m. in circumference; off Viti levu, Fiji. 18° 11′ S., 178° 30′ 10″ E.⊙

Mulgrave, in Torres strait. 10° 07′ S., 142° 09′ E.⊙

Mulgrave, see Mille of the Marshall islands.

Muli, see Moali of the Loyalty group.

Mulifonua, islet of Fakaafo or Bowditch. 9° 19′ S., 171° 13′ W.

Mumbualau, islet between Suva and Levuka, Fiji.

Muna, Nguna, Nuna or Montague, islet on the northeast coast of Faté, New Hebrides; 1500 ft. high.

Mungaiwa, islet of Yanutha of the Ringgold group, Fiji.

Munia, of the Exploring islands, Fiji; 2×1 m., 1054 ft. high. 17° 22′ S., 181° 07′ 30″ E. Inhabited.

Munia, southwest from Fauro, Solomon islands; 0.7 m. in diameter, 275 ft. high, wooded.

Murray, islet in Nares harbor, Admiralty island. Named for Dr. John Murray of the *Challenger*.

Murray, see Mer.

Murray, 100 m. northeast from Cape York in Torres strait. 10° 05′ S., 144° 05′ E.

Murray, see Buraku, Solomon islands.

Murua or Woodlark, in the Kiriwina group, was discovered by Captain Grimes of the *Woodlark* of Sydney before 1836; 40 m. E-W. Northwest point 8° 54′ S., 152° 35′ E. **9.**

Mururoa, Osnaburgh or Matilda, was discovered by Carteret in 1767. It consists of 18 low islands extending 14 m. The last name from the wreck of the whaler *Matilda* in 1792. East end in 21° 50′ S., 138° 45′ W. Paumotu archipelago. **22.**

Muschu or Gressien, fertile and well peopled, on the north coast of New Guinea. 3° 24′ S., 143° 28′ E.

Museeket, islet of Ailinglablab, Marshall islands. **6.**

Muskillo, see Nemu, Caroline islands.

Muswar, in Geelvink bay, north coast of New Guinea. 2° S., 134° 25′ E.

Mutakaloch, islet off the Metalanim coast of Ponapé, Caroline islands.

Muthuata, off Vanua levu, Fiji; 1.1×0.5 m., 1005 ft. high. East end in 16° 25′ S., 179° 03′ 54″ E.

Mutok, islet on the south side of Ponapé, Caroline islands.

Mutokaloj, islet of Ponapé, Caroline islands.

Muturabu, islet of Tongatabu. 21° 05′.30″ S., 175° 01′ W.

Muwo, of the Kiriwina group. 8° 43′ S., 150° 58′ E.

Myet, in the Bismarck archipelago. 4° 06′ S., 152° 27′ E.

Mysory, see Schouten.

Manuna, islet east of Port Moresby on the south coast of New Guinea. 9° 33′ S., 147° 16′ E.

Mywoolla, see Kandavu, Fiji.

Nada, see Laughlan.

Nagian, on the north side of the northeast opening of Egum atoll. 9° 23′ S., 152° 03′ E.

Nago, islet at mouth of Nusa harbor of New Ireland.

Naiabo, small coral island, 40 ft. high, with a barrier reef 3 m. in circumference, in the Lau group, Fiji.

Naiau, 3.5×2 m., 500–600 ft. high, Fiji. About 230 inhabitants.

Naingani (Naigani), Fiji; 1×0.7 m., 420 ft. high. North point in 17° 33′ 40″ S., 178° 43′ E.

Nairai, 10 m. N. by E. from Ngau, Fiji; 4 m. N-S., 1.5–3 m. E-W. Needle peak 1078 ft. high. The north point in 17° 45′ S., 179° 28′ 30″ E. In 1880 there were 612 inhabitants.

Nairn, off the southwest coast of Ysabel, Solomon islands. 7° 40′ S., 158° 20′ E.

Nairsa, see Rangiroa (Rahiroa) of the Paumotu archipelago.

Naitamba (Naitaba), Fiji; is high and rugged, triangular, 1.5 m. in diameter, 610 ft. high. Inhabited by Europeans.. 17° 03′ 30″ S., 180° 46′ E.⊙

Nakandra nui, islet on the north coast of Vanua levu, Fiji.

Nakoga, see Anologo, Matema islands.

Nakudi, islet of Butaritari, Gilbert islands. 3° 08′ 25″ N., 172° 41′ 15″ E.

Nakumbutha, small, rocky island off Vanua levu, Fiji. 16° 35′ 30″ S., 178° 36′ 30″ E.⊙

Nalap, islet of Ponapé, Caroline islands, off Ronkiti river.

Nalogo, a trader's name for Anologo.

Nama or D'Urville (Peace?), of the Caroline islands, is small, without a lagoon, but higher than most of the group. 6° 59′ N., 152° 33′ E. **4.**

Namaka, islet of Butaritari, Gilbert islands. 3° 11′ 30″ N., 172° 54′ E.

Namatotte, off the New Guinea coast. 3° 53′ S., 133° 49′ E.

Nambite, low, off Vanua levu, Fiji. North point in 16° 27′ 54″ S., 178° 50′ E.

Namena or Direction, Fiji; two high (320 ft.) hills covered with dense foliage; uninhabited; 1×0.2 m. Namena reef encloses a lagoon 13 m. long and 2–3 m. wide, with an average depth of 16–20 fathoms. 17° 06′ S., 179° 06′ E.

Namo or Margaretta of the Marshall islands. South point in 8° 55′ N., 167° 42′ E.

Namoliaur, islet of Elato, Caroline islands.

Namolipiafane, of the Caroline islands, was discovered by Hall in 1824. The reef is 40 m. in circumference, encloses 13 islets, among them Ikop, Fananon, Namonine. 8° 25′ 30″ N., 151° 49′ 15″ E. **4.**

Namoluk or Skiddy, of the Caroline islands, was discovered by Lütke in 1828. Reef is 15 m. in circumference, with five islets. 5° 45′ 15″ N., 153° 16′ 30″ E. **4.**

Namonuito, Bunkey, Anonima, Livingstone, was discovered by Ibargoitia in 1801. Reef enclosing the group is 45 m. E-W. The islets are Amytideu, Maghyr, Maghyrarik, Ounalik, Onoup, Pilipal, Pizaras and Ulul. 8° 33′ N., 150° 31′ E.

Namorik or Baring, of the Marshall islands, was discovered by Captain Bond December 15, 1792. Two islands on a reef 5 m. in diameter. Population about 300. 5° 35′ N., 168° 18′ E.⊙ **6.**

Namorus or Namorousse, islet of Morileu, Caroline islands.

Namotu, islet 300 yds. in diameter on the west coast of Viti levu, Fiji.

Namtuiroj, islet of Kwadjalin, Marshall islands.

Namu, see Nemu.

Namua, islet east from Upolu, Samoan islands.

Namuine, islet of the Namolipiafane atoll in the Caroline islands. 8° 25′ 30″ N., 151° 49′ 15″ E.

Namuka, see Nomuka, Tongan islands.

Namuka is 7 m. west from Mbenga, Fiji, enclosed in the same reef; 1.7 m. N-S. by 1 m. 18° 21′ 50″ S., 177° 58′ 50″ E.⊙

Namuka i lau (eastern), 15 m. north from Fulanga, Fiji; 4 m. E-W., 1.5 m. N-S.; 260 ft. high. East point in 18° 47′ S., 181° 21′ 30″ E.

Namuka, islet 3 m. southwest from Suva harbor, inside the shore reef; inhabited. Fiji.

Namuka, islet off centre of south side of Api, New Hebrides; 500 ft. high. 16° 49′ S., 168° 19′ E.

Nananu group, Fiji, consists of Nananu ira and i thake (leeward and windward); 230 ft. high.

Na Ndongu or Tiri islands, off north coast of Vanua levu, Fiji.

Nangani, 5.5 m. northwest from Ovalau, Fiji; 1 m. N-S., 600 ft. high.

Nangati, in Yasawa group, Fiji; 1×0.5 m., 930 ft. high; inhabited. 16° 57′ 30″ S., 177° 19′ 40″ E.⊙

Nani, islet between Nékété and Lavaissiere bays on the southeast coast of New Caledonia.

Nanikirata, islet of Apaiang, Gilbert islands. 1° 54′ N., 172° 54′ 30″ E.

Nanomanga or Hudson, of the Ellice group, is 1.5 m. N-S., 1 m. E-W.; lagoon closed. Population in 1886 was 320 protestants. 6° 13′ S., 176° 16′ 30″ E. **16.**

Nanomea, the San Augustine of Maurelle, 1781, was discovered by Maurelle. There are two islands on the reef within 3–4 m. of each other, the westerly called Lakenu, the other Nanomea. Supposed to be the Taswell and Sherson of the brig *Elisabeth*, 1809. Nanomea is 4×1.5 m. Rev. J. S. Whitmee says the inhabitants are physically a remarkably fine race, numbering about 1000 (1870). This is the northernmost of the Ellice group. 5° 36′ 30″ S., 176° 10′ E.⊙

Nanouki, see Aranuka of the Gilbert islands.

Nanoulu, of the Kiriwina group, is in 8° 46′ S., 150° 58′ E.

Nanouti, see Nonuti or Sydenham, Gilbert islands.

Nantucket, see Baker.

Nansouti, a wooded islet on the barrier reef of Tahiti, Society islands. **20.**

Nanuia, high, inhabited islet, 0.7 m. in diameter; of the Yasawa group, Fiji. 16° 58′ 30″ S., 177° 19′ 50″ E.⊙

Nanuku, Fiji; 1.5×0.5 m. on a reef 14×8 m. 16° 42′ 30″ S., 180° 36′ E.⊙

Naonao, islet on the south reef of Raiatea, Society islands.

Napasa, islet on northeast part of outer ring of Egum atoll. 9° 20′ 30″ S., 152° E. **9.**

Napier, off northeast coast of Raoul, Kermadec islands.

Napuka or Whytoohee, in the Disappointment group of Byron, Paumotu archipelago. Wooded islets connected by an irregular reef enclosing a lagoon. Inhabitants said to be a distinct race. The east end is in 14° 10′ 40″ S., 141° 12′ 50″ W.

Napuni, islet of Butaritari, Gilbert islands. 3° 10′ 20″ N., 172° 41′ 10″ E.

Naranarawai or Skelton, of the Louisiade archipelago, is an inhabited island 2 m. ESE-WNW. by half a mile wide, and 500 ft. high.

Narancpuli, islet at the entrance to Port Lod on the southeast side of Ponapé, Caroline islands.

Narangi or Narangai, high island of Fiji. 16° 48′ 30″ S., 179° 29′ 20″ E.⊙

Narborough, of the Galapagos, is a volcano 3720 ft. high.

Narcissus, see Tatakoto of the Paumotu archipelago. **22.**

Nares, on the Australian coast. 19° 44′ S., 148° 21′ E. Named for Captain G. S. Nares of the *Challenger*.

Naria, in Cloudy bay, New Guinea. 10° 14′ S., 148° 39′ E.

Narlap, islet with Narmaur forming the entrance to Kiti harbor on the southwest end of Ponapé, Caroline islands

Narmaur, at the mouth of Kiti harbor, Ponapé, Caroline islands. 6° 47′ N., 158° 08′ E.

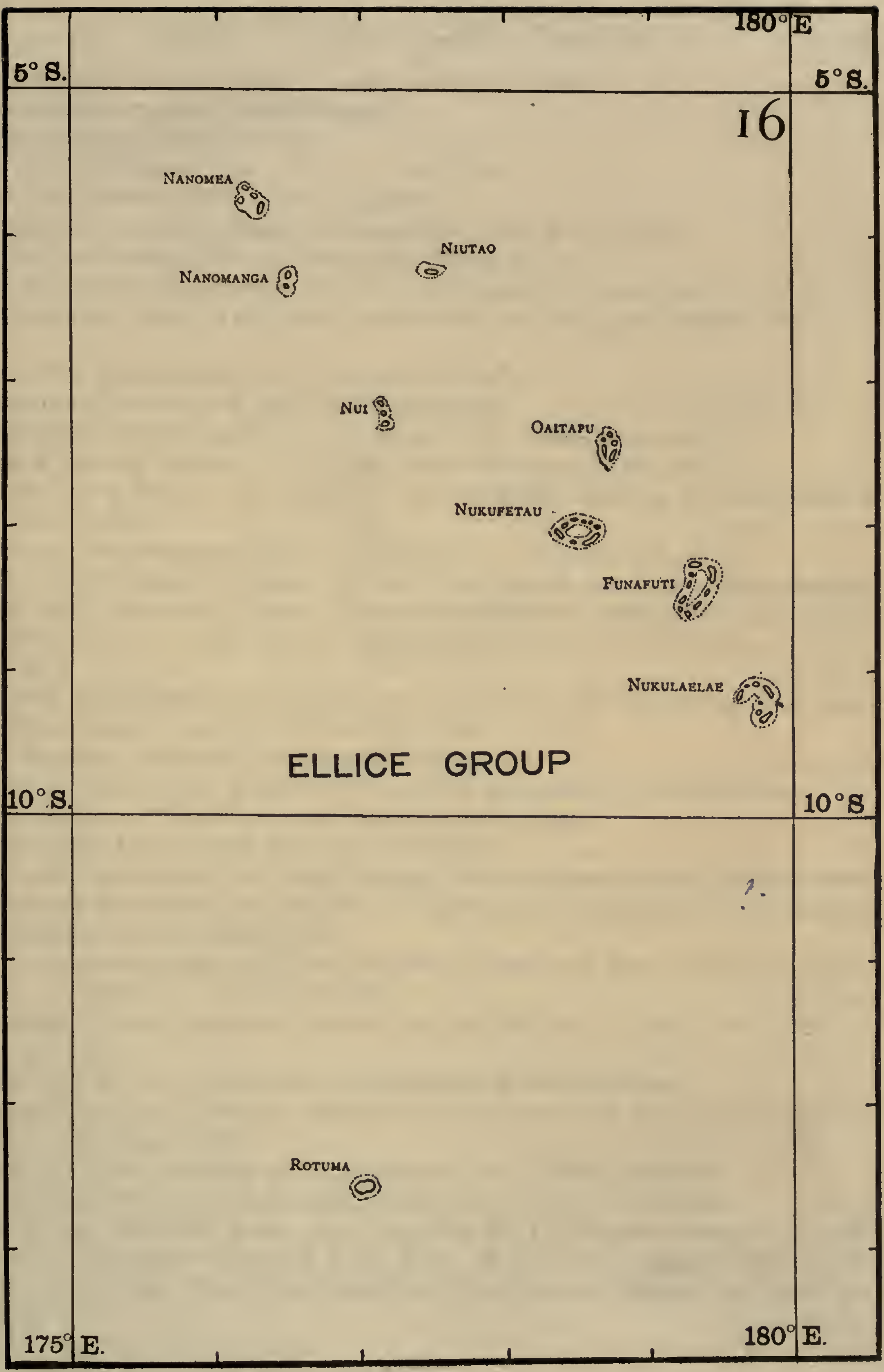
Narovo or Eddystone, of the Solomon islands, is 4×1 m.; volcanic, the activity confined at present to the south portion; lagoon frequented by crocodiles. Natives friendly and good pilots. Eddystone Rock and Simbo are islets on the reef of Narovo. 8° 15′ S., 156° 28′ E.

Narri or Mudge, of the Louisiade archipelago, is a low, coral, uninhabited islet 0.7 m. NE-SW. 10° 45′ S., 150° 18′ E.

Nasakor, one of the south group of islets in Egum atoll lagoon. 9° 27′ S., 151° 58′ 30″ E. **9.**

Nassau, islet discovered in 1835 from the whaler *Nassau;* fringing reef. 11° 33′ 20″ S., 165° 25′ W.

Nataka, islet of Butaritari, Gilbert islands. 3° 10′ 10″ N., 172° 55′ 10″ E.


180° E
5° S.
5° S.
16
Nanomea
Niutao
Nanomanga
Nui
Oaitapu
Nukufetau
Funafuti
Nukulaelae
ELLICE GROUP
10° S.
10° S
Rotuma
175° E.
180° E.

Nathula (Nacula), islet between Yasawa and Naviti, Fiji.

Nau, on southeast coast of New Caledonia.

Nauru, see Nawodo, Gilbert islands.

Nauta, of the Kiriwina group. 8° 37′ S., 150° 50′ E.

Nautilus, see Tapiteuea of the Gilbert islands.

Nautaniwono, uninhabited islet of Mamanutha i caki group, Fiji.

Navandra, uninhabited islet of Mamanutha group, Fiji.

Navini, sand islet in Nandi waters on the west coast of Viti levu, Fiji.

Naviti, important island of the Yasawa group, Fiji; 8×3 m., 740± ft. high. 17° 05′ S., 177° 14′ E.

Naviu, on the New Guinea coast. 8° 12′ S., 143° 36′ E.

Navumbalavu, islets 122 ft. high off Viti levu, Fiji. 17° 37′ 30″ S., 178° 37′ E.⊙

Navutuiloma, densely wooded; 210 ft. high; in the Yangasa cluster, Fiji.

Navutuira, densely wooded; 270 ft. high, in the Yangasa cluster, Fiji.

Nawi, islet 130 ft. high at the mouth of the Na Kama creek on the south coast of Vanua levu, Fiji.

Nawi, islet of the Schouten group in Geelvink bay. 2° 15′ S., 136° 18′ E.

Nawodo, Nauru, Shank or Pleasant of the Gilbert islands was discovered by Captain Fearn of the *Hunter* in 1795–8; 15 m. in circumference, raised coral, 100 ft. high; in centre a fresh water lagoon. Population about 1200, a fine race. 0° 25′ S., 167° 05′ E.

Nayau, Fiji, an inhabited island 4×2.5 m., 275 ft. high, with reef on one side only. Northwest point is in 17° 57′ 30″ S., 180° 58′ E.

Nda, on the great reef south from New Caledonia.

Ndé, islet on passage from Noumea to Uen island, south end of New Caledonia.

Ndendi, a spelling of Nitendi or Santa Cruz, New Hebrides.

Ndie, islet of the Great South Reef, New Caledonia.

N'digoro, islet on the outer reef in Isie passage on the northwest side of New Caledonia.

Ndrendre and Ndrendre lailai, islets with Thumbu on the north coast of Viti levu at the entrance to the Rakiraki river.

Ndravuni or Colvocoressis, Fiji; an inhabited island 1.2 m. N-S., 0.2 m. E-W.; 350 ft. high. 18° 49′ 30″ S., 178° 25′ 40″ E.⊙

Ndruandrua, islet on the north coast of Viti levu, Fiji; 156 ft. high. 16° 12′ 24″ S., 179° 35′ 20″ E.⊙

N'dakue, islet in Port Uitoe on the southwest side of New Caledonia.

Ndundine, Ndundure or Molard, uninhabited island west from Maré, 3 m. in circumference. Loyalty islands.

Néa, islet in Kuabuni opening on the southeast coast of New Caledonia.

Néba, inhabited islet in Pumé passage, northwest coast of New Caledonia.

Necker, of the Hawaiian group, was discovered by La Pérouse November 1, 1786. Named for the great minister of Louis XVI. Rocky; 280 ft. high; volcanic, the remains of a crater with a shoal extending miles to the southward. 23° 35′ 18″ N., 164° 39′ W.

Neckes, see Puketutu, New Zealand.

Negeri, see Nihiru of the Paumotu archipelago.

Nekumara, islet between Dobu and Kwaiope, east from Dawson strait, D'Entrecasteaux group. 9° 44′ S., 150° 54′ E.

Nemu or Double, islet in Infernet passage on the southwest coast of New Caledonia.

Nemu or Musquillo, atoll of the Marshall islands. The south point is in 8° 14′ N., 168° 03′ E.

Nendahandé, islet south from Balabio on the northeast coast of New Caledonia.

Nendialé, islet in Banaré bay on the northwest coast of New Caledonia.

Nengone, the native name of Maré or Britannia of the Loyalty islands.

Nengonengo or Prince William Henry of the Paumotu archipelago was discovered by Wallis in 1765; 5 m. E-W. North end is in 18° 43′ S., 141° 40′ W. **21.**

Neni, low and covered with coconut trees, on the northeast coast of New Caledonia.

Nenon or Nenu, in Port Bouquet on the east coast of New Caledonia; 1.5 m. E. by N.–W. by S.

Nepean, island with extensive reefs in Torres strait. 9° 34′ S., 143° 38′ E.

Nepean, one of the Kermadec islands; 0.2 m. long, 50 ft. high. 29° 04′ S., 167° 58′ E.

Netherland, see Nui of the Ellice islands.

Neu Hannover, see New Hanover.

Neu Lauenburg, German name for Duke of York islands.

Neu Mecklenburg, German name for New Ireland. It seems unfortunate that in changing the well-known names of their new possessions the Germans should not have improved on the former rather unsuitable appellations. I cannot see that New Mecklenburg is any more appropriate than New Ireland.

Neu Pommern, the German name for New Britain.

Nevelo, see Lomlom, Santa Cruz.

Nevil, see Tobi, Caroline islands.

New, island of the New Guinea region. 2° 30′ S., 131° 34′ E.

New Amsterdam, the name given by Tasman to Tongatabu.

New Britain (Neu Pommern of the Germans). Carteret, in 1767, found that what Dampier had supposed a bay when in 1700 he sailed through the strait that bears his name and proved that there was an island distinct from New Guinea, was really another strait, so he named the land to the east New Ireland, and the western one New Britain. Little is known of New Britain, large as it is. There are many active volcanoes in the long and narrow island. Cannibals are numerous but in constant tribal warfare; 330 m. long, nowhere more than 50 m. wide. The north point is in 4° 07′ S., 152° 10′ E. **10.**

New Caledonia was partly discovered by Cook, but D'Entrecasteaux completed the work. Taken by France in 1853 it was made a penal settlement in 1883 in spite of the experience of England in her Australian penal stations, and the constant escape of convicts is a great damage to the neighboring colonies. New Caledonia is about 216 m. long, 30 m. broad. There are two parallel ranges of mountains extending the whole length; the eastern, about 2500 ft. high, has an even and regular outline, while the western mountains are higher (2600–3600 ft.) and more irregular in form. Mt. Douit, over Cape Colnett, is 5570 ft. high. Among other minerals nickel is found here.* The native houses are generally conical. The natives use jade in weapons and ornaments. The winter season is from December 15 to April 15. The north point is in 20° 45′ S. **13.**

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*Heurteau—Rapport sur la Constitution de la Nouvelle Calédonie, 1876. Pelatan—Les Mines de la Nouvelle Calédonie, 1892.

New Georgia, see Rubiana of the Solomon islands.

New Guinea was discovered by the Portuguese Jórge de Meneses in 1524; visited by Saavedra in 1528; Grijalva y Alvarado in 1537; Inigo Ortiz de Retes in 1545, and the last gave the name New Guinea. The history of the discovery of New Guinea is a most complicated one, each discoverer mapping but a small portion of the coast, and to this day the coast line is not well surveyed, while much of the interior remains unexplored. In 1705 a Dutch expedition explored the deep bay on the north coast which was named for one of the ships of the expedition Geelvink (yellow finch), and many other Dutch explorers were sent by the East India Company from Batavia to this portion of New Guinea which was gradually claimed by Holland. The boundary of Dutch New Guinea on the east is a straight line drawn from Cape Bonpland on the east side of Humboldt bay, in 140° 47′ east longitude to 140° E. on the south coast. In 1885 the portion not claimed by the Dutch east of the 141st meridian was divided between England and Germany, the former taking the south coast from the mouth of Bensbach river in latitude 9° 07′ 35″ S., longitude 141° 01′ 48″ E., this meridian forming the boundary till it meets the Fly river which becomes the boundary until it crosses the 141st meridian; also all the north coast from the east point to Mitre rock in latitude 8° S. April 4, 1883, the resident magistrate at Thursday island hoisted the British flag at Port Moresby and took possession of all between 141° and 155° E. And on September 4, 1888, the Administrator proclaimed the annexation as a crown colony under the name of British New Guinea.

In its greatest length WNW.–ESE. New Guinea extends 1306 m., and its area, including adjacent islands, is about 312,000 sq. m. The Owen Stanley range rises to a height of 13,205 ft. Many tribes are found, but the type is Papuan, and is found in purity on the northern portion. To the northeast Polynesian colonies have resulted in some mixture. On the south coast the natives are enterprising traders, making long voyages with the monsoons in their *lakatois* which are clumsy, compound boats with two masts and V-shaped sails. Sago and pottery are the principal cargo. Houses on the shore are built on piles, and farther inland often in trees for safety.

For further information as to the discovery see Bougainville, Edwards, Flinders, D'Entrecasteaux, Freycinet, D'Urville, Moresby, Owen Stanley. And for the geography and general description, see D'Albertis, Lawes, Chalmers, Powell, and the reports of the Administrator.

New Hanover (Neu Hannover of the Germans) was discovered by Carteret. It is 37 m. E-W., 20 m. N-S. Fertile and mountainous, rising to 2000 ft. **10.**

New Hebrides. Quirós was the first to discover any of the extensive group, or rather groups, which are now known by the collective name of New Hebrides. He saw but one island which he fondly imagined was part of the great southern continent, then the dream of navigators, and he called his discovery *Australia del Espiritu Santo*, a name since curtailed to Santo in the Trader's vernacular. Cook discovered most of the southern chain and he gave the name New Hebrides in 1773. The natives are of the black Papuan or Melanesian stock and have a reputation for cannibalism, treachery and uncertain temper. They have been outraged repeatedly by the labor pirates, and their hostility to the kind of white men who have principally reached their islands does not seem unreasonable. They are far from being an homogeneous population: Polynesian settlements exist throughout the group, and more than a score of languages are noted. The climate is not very well suited to white occupation, being damp and otherwise unwholesome. Although the group has not been well studied interesting particulars of portions of the islands have been published by the missionaries who have labored against great discouragement, and more especially by Commander Markham in his "Cruise of the Rosario," 1872. Walter Coote's "Wanderings, South and East," 1892; and Julius Brenchley's interesting "Cruise of the Curaçoa," 1865.

Part of the group has already been annexed by Great Britain, and it is supposed that France has desires for the rest as contiguous to her New Caledonian colony. Several agricultural companies of each nation are attempting to develope the resources of the country. **12.**

New Ireland (Neu Mecklenburg) was supposed by Lemaire and Schouten to be a part of New Guinea. Dampier, in 1700, proved it to be a separate island, and sixty-seven years later Carteret demonstrated the strait between it and New Britain. 240×15 m., volcanic and rising to 7000 ft. Papuans, physically inferior to those of the Solomon islands. Cannibals; practise circumcision but not tatuing. Country not well known.

New Jersey adjoins Santa Cruz.

New Market, see Baker.

New Nantucket, see Baker.

New Philippines, a name once given to the Caroline islands.

New Year, see Miadi of the Marshall islands.

New York, see Washington. The same name was given by Fanning in 1798 to Eiao of the Marquesas.

New Zealand. This important group lies between the parallels of 34° 30′ and 47° 30′ south latitude and the meridians of 166° 36′ 30″ and 178° 36′ 05″ east longitude, being roughly the antipodes of Great Britain. The area is 104,403 sq. m. or nearly equal to that of the British islands. The three islands are variously styled, but the Maori names were *Te ika a Maui* (The fish of Maui) for the northern one; *Te wahi Pounamu* (The place of Greenstone) for the middle; and *Rakiura* for Stewart island. These have given place to New Leinster, New Ulster and New Munster (of Governor Hobson), or more commonly Northern, Southern and Stewart.

Tasman sighted the western coast December 13, 1642, but in sending a boat ashore the natives attacked and killed four of the crew. Tasman called the place Mordenaars (Murderers) bay and did not again attempt to land, but sailed to the extreme northern end, discovering Three Kings islands (on the eve of Epiphany) and thence sailed to the Tongan islands. Tasman's first name, Staatenland, he later changed to Nova Zeeland. Cook was the next European to reach these shores (October 6, 1769) and in Mercury bay, on November 11, he took formal possession for King George III. Cook spent nearly a year (327 days) in the group and his surveys gave the first definite knowledge of the islands.

As early as 1814 a Church mission was started and later other denominations followed. In 1840 both Wellington and Auckland were founded and colonists gathered until the natives were driven to exasperation and wars followed for many years. At present all is peace and by the wise system of the British the Maoris are segregated as much as possible, so that the traveller who merely visits the principal cities rarely sees a Maori. The census of 1881 gave 44,099, a slight increase over the previous one. Yet, as the estimate in 1840 was 107,000, the race is dying as all other inferior people must in the presence of the white intruders.

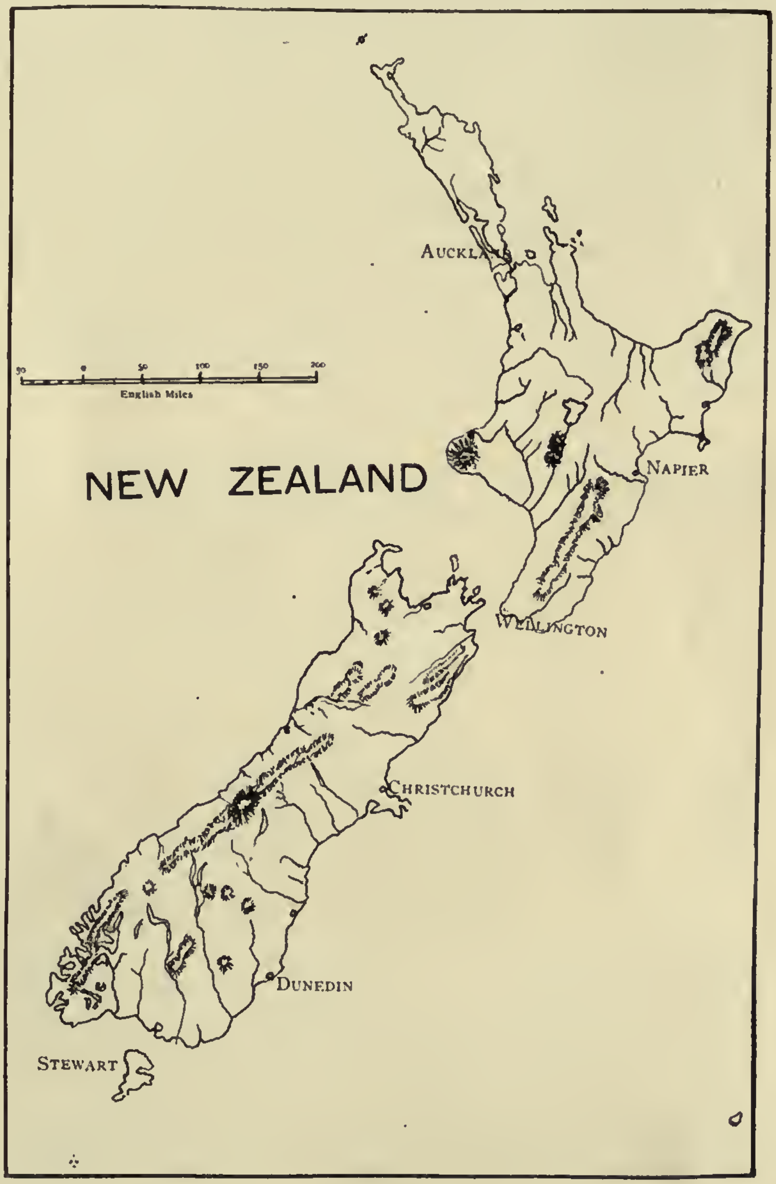


FIG. 8.

The Maori race is supposed, mainly on the basis of their own traditions, to have come to New Zealand in the fifteenth century from Hawaiki to the eastward. Their language closely resembles the Hawaiian, but these, whose traditions go far beyond that date, have no remembrance of such an emigration as told in the Maori traditions. When first discovered they were cannibals and particularly fierce, but like other cannibals they showed remarkable talent for fine work; and to their intelligence is due the fact of their rapid conversion to Christianity and their comprehension of the advantages of civilization, which while removing them speedily from a world of trouble promised them a pleasanter one beyond the grave, "where the wicked cease from troubling." Maoris are a fine race of Polynesians, more manly and vigorous than the Hawaiian whom they closely resemble in outward form.

The climate of New Zealand is not extreme but is subject to sudden changes, which do not increase the death rate which is very low. Volcanoes and snow-capped mountains add greatly to the beauty of the scenery, and also give variety to climatic effects. One thing is quickly noticed by the traveller, that the ruddy complexions of England are rather enhanced here while they soon disappear in the Australian colonies.

Nexsen, a name given by Fanning, in 1798, to Hatutu of the Marquesas islands.

Ngaloa (Galoa), of the Fiji group, is a small island which gives its name to the harbor on the south side of Kandavu. 19° 05′ 10″ S., 178° 11′ 30″ E. (*Challenger* survey.)

Ngaloa, on the north coast of Vanua levu, north of Lekutu river. Thickly peopled. 16° 37′ 24″ S., 178° 41′ 32″ E.⊙ **14.**

Ngamea (Qamea), northeast from Taviuni, Fiji; 5.7 m. long E-W., 1000 ft. high; about 500 inhabitants. 16° 47′ S., 179° 44′ W. **14.**

Nganati, Pinaki or Whitsunday of the Paumotu archipelago, was discovered by Wallis in 1767. It is low and wooded. 19° 40′ 22″ S., 140° 22′ 28″ W. There is much confusion on the charts. **21.**

Ngasi mbali, a low, uninhabited islet off Kandavu, Fiji, 60 ft. high.

Ngatik, or Raven islands, 50 m. SW. from Ponapé; discovered in 1773 by Don Felipe Tompson; 22 m. in circumference, and there are 11 islets on the unbroken reef. There is a small lagoon. Much copra is exported. 5° 47′ 30″ N., 157° 32′ E. **5.**

Ngau, the Angau of Wilkes, is 27 m. southeast from Ovalau, Fiji; 11.2×4 m. On the west is a barrier reef 16 m. long. Dilathoa peak is 2345 ft. high, in 17° 58′ 30″ S., 181° 33′ 30″ E.

Ngé, islet near Dumbea passage at the south end of New Caledonia.

Ngea, islet in Bulari bay, New Caledonia.

Ngele levu, a coral reef 1 m. SE-NW. in the Ringgold group, Fiji.

Ngoli, or Lamoliork, Caroline islands. The Matelotas of Villalobos in 1545; consists of five islets, the south one inhabited. 8° 15′ N., 137° 35′ E.

Ngualito, islet of Malolo islands, Hudson group, Fiji.

Nguna, see Muna of the New Hebrides.

Niau, or Greig, a low, wooded island of the Paumotu archipelago, 4 m. in diameter, with a closed lagoon. The hurricane of 1878 almost depopulated this island. 16° 11′ S., 146° 22′ W.⊙

Nibanga, the southeast island of the Matema group; small, round, 200 ft. high, inhabited. 10° 21′ S., 166° 17′ E. Santa Cruz islands.

Nicholson, in the Tongan group, was first known as Beveridge reef, now a coral island 3×2 m.; an example of an island formed from a reef in recent times. 20° 02′ S., 167° 49′ W.

Nié, islet in Dumbea bay, north from Ducos peninsula on the southwest side of New Caledonia.

Nielsen, islands off the north coast of New Guinea at the mouth of Prince Albrecht harbor.

Niénane, a high, bare rock between Daos and Art islands, Belep group, New Caledonia.

Nigeri, see Nihiru of the Paumotu archipelago. **21.**

Nifilofi or Nifilole, of the New Hebrides, extends 1 m. NW-SE., and is 120 ft. high.

Nifo, in the Yasawa group, Fiji, is between Matathoni levu and Yangati. 16° 59′ 30″ S., 177° 19′ 10″ E.⊙

Night, a wooded island on the Australian coast. 13° 11′ S., 143° 35′ E.

Nigahau, islet off the northwest point of Panatinani, Louisiade archipelago.

Niguna, see Muna, New Hebrides.

Nihiru, Niheri or Nigeri, of the Paumotu archipelago, is a well wooded island with a lagoon opening on the south side. It is 7 m. in diameter. North point is in 16° 41′ S., 142° 53′ W. **21.**

Nihoa or Bird, of the Hawaiian group, is a volcanic mass rising steep from the water to a height of 880 ft., the only landing place being on the south side. Discovered by Captain Douglas of the *Iphigenia* April 13, 1789. Modu manu of the old charts is a corruption of Moku manu=Bird island. 23° 05′ 50″ N., 161° 56′ 30″ W. **1.**

Niihau, of the Hawaiian group, is the most westerly inhabited island of the group, with a superficies of 62,000 acres, and is about 16×6 m. and 800 ft. high. Used mainly as a sheep ranch. **1.**

Nileuti, a wooded islet in Tohio passage, on the southeast coast of New Caledonia.

Nimanu is 25 m. northeast of Santa Cruz; 200 ft. high. 10° 21′ S., 166° 17′ E.

Nimoa or Pig, of the Louisiade archipelago, is fertile, well wooded and inhabited; the largest in Coral Haven 1.5 m. southeast from Panatinani; 455 ft. high.

Nimrod islands were seen by Captain Eilbeck in the *Nimrod* in 1828. 56° 20′ S., 158° 30′ W. Existence doubtful.

Nina, see Aniwa, New Hebrides.

Ninepin, on the coast of New Guinea. 10° 13′ S., 142° 40′ E.

Ninita, in the Louisiade archipelago. 11° 17′ S., 153° 15′ E.

Ninon, of the Louisiade archipelago, is northeast from Moturina. Half a mile long, 175 ft. high.

Ninuha, on the east coast of Ysabel, Solomon islands. 7° 54′ S., 159° 20′ E.

Nitendi, see Santa Cruz, of the New Hebrides. **12.**

Nina, see Aniwa, New Hebrides.

Niuababu, islet of the Tongan group.

Niuafoou, of the Tongan islands was discovered by Captain Edwards in H. M. S. *Pandora* August 3, 1791, and by him called Proby. It is an active volcano 3.5 m. N-S., 3 m. E-W. Was in eruption in 1853 when many lives were lost; April 12, 1867, and again in 1886 and 1887. 15° 34′ S., 175° 40′ 40″ W.

Niuatobutabu, of the Tongan group, was discovered by Lemaire and Schouten May 11, 1616. Named Keppel by Wallis in 1767. It is 2000 ft. high. 15° 52′ S., 173° 50′ W. **18.**

Niüe or Savage. 19° S., 170 W. Is a coral island upheaved, 300 ft. high, and about 30 m. in circumference. It was named by Cook (June 20, 1774) Savage because his boats were fiercely attacked when making a landing. Population in 1872, 5,124; is increasing. Natives rather small and dark; have a language of their own closely resembling Samoan; were not cannibals, did not offer human sacrifices nor worship idols. Much of their work was quite distinct. **15.**

Niue, islet of Fakaafo. 9° 22′ 40″ S., 171° 13′ W.

Niumano or Tasman atoll is the easternmost and largest of the Tasman group. 4° 35′ S., 159° 30′ E.

Niutao, alias Lynx, Sepper, Speiden (Wilkes) of the Ellice islands, is 2.5×1.5 m., densely covered with coconut trees. Population, 417. 6° 08′ S., 177° 22′ E. **16.**

Nivani or Nivan, a small island southwest of Misima (St. Aignan) in the Louisiade archipelago.

Nmara, a grassy, uninhabited islet 230 ft. high on Kandavu reef, Fiji.

Nogahanghe, a rocky islet near Paâbâ island on the northwest coast of New Caledonia.

Noina or Burnett is small and wooded, 3.5 m. N. by E. from Panasia, Louisiade archipelago.

Nokue or Infernal islet in Kuto bay, Isle of Pines. **13.**

Noma, islet in lagoon 9 m. from Losap, Caroline islands; 200 inhabitants. **4.**

Nomuka, of the Tongan group, the Annamooka of Cook, is a triangular coral island, the sides 2 m. long. Peaks rise to a height of 166 ft. Closed salt lagoon 0.7 m. in diameter. 20° 15′ S., 174° 50′ W.

Nono, islet of Pavuvu or Russell group, Solomon islands. 8° 02′ S., 159° 05′ E.

Nonuti, Sydenham, Dog, Blaney, or Nanuti of the Gilbert islands, measures 19×8.5 m. The southeast point is in 0° 46′ 05″ S., 174° 31′ 30″ E. **7.**

Norbarbar is the native name of Ureparapara or Bligh in the Banks group.

Nord, see Gipps, Bismarck archipelago. **10.**

Norfolk, was discovered by Cook October 10, 1774. It is 5×2.5 m. and 1050 ft. high. The English frigate *Sirius* was wrecked here near the end of 1790. It belongs to New South Wales. This beautiful island was once a convict station, but this was given up in 1855 and the next year the Pitcairners were removed from the lonely island where they had vegetated for 67 years to this much finer island. Soon, however, 40 of the 194 returned to their old home. Those on Norfolk island have doubled their number and are fairly prosperous. 29° 01′ S., 167° 56′ E.

Normanby, a name of Duau of the D'Entrecasteaux group.

Norsup, a low, wooded islet, uninhabited, near Port Stanley, Malekula, New Hebrides.

North or High, Fiji. 16° 28′ 30″ S., 180° 20′ 30″ E.⊙

North, see Hetau, Solomon islands. 8° 50′ S., 159° 58′ E.

North, in Marau sound on the northeast coast of Guadalcanar, Solomon islands. 9° 44′ S., 160° 47′ E.

North, small island on the north side of the Trobriand reef. 8° 25′ S., 150° 48′ E. **9.**

North or Nord, see Gipps, Bismarck archipelago. **10.**

North, one of the Torres group, Banks islands; 1200 ft. high.

North, group of islets off the north coast of New Hanover.

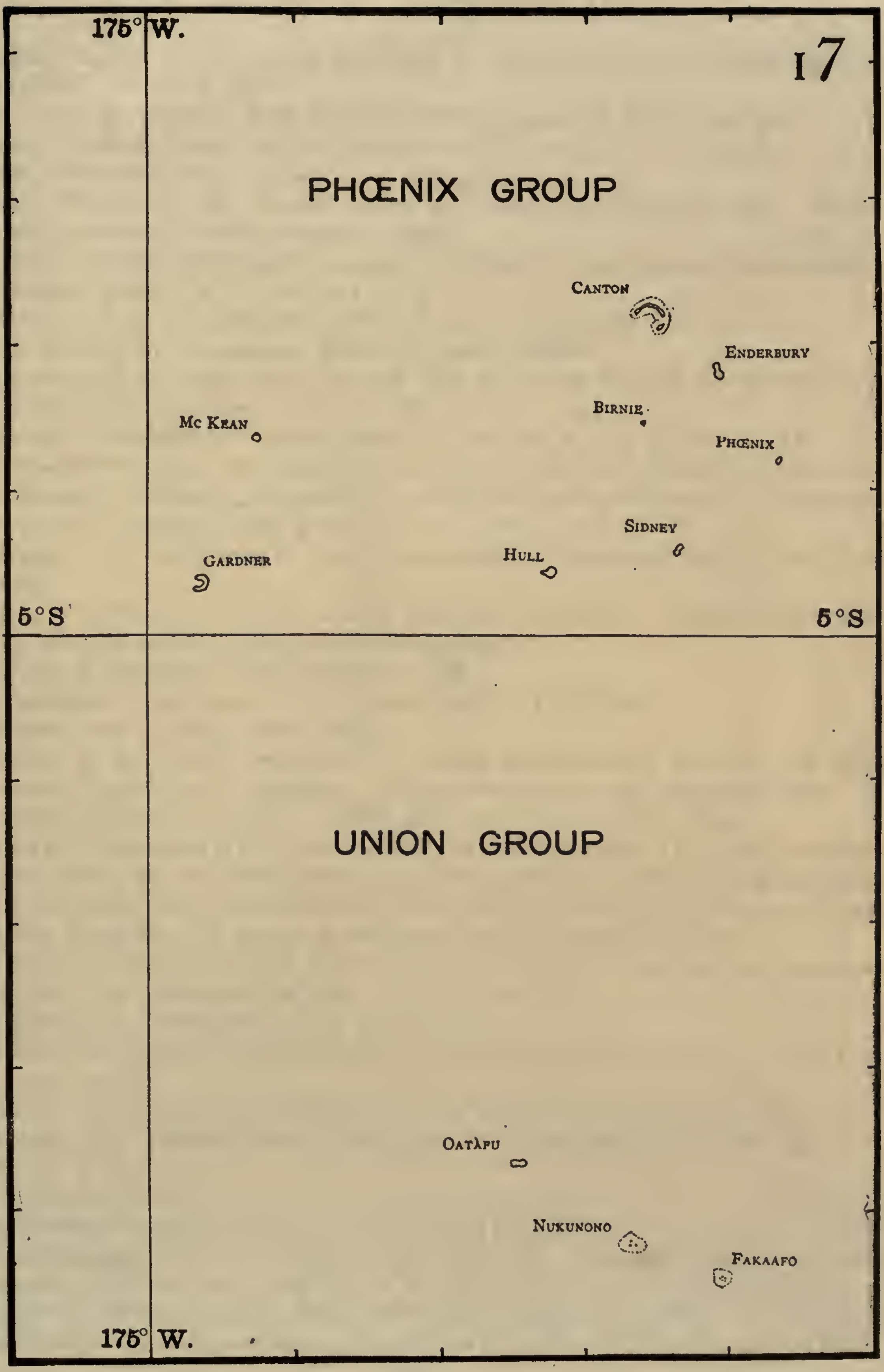
Northumberland, an extensive group on the east coast of Queensland, Australia, reaching to 22° S.

Norton, in the Bismarck archipelago. 5° 24′ S., 150° 31′ E.

Nosoata, islet at the mouth of Rewa river, Viti levu, Fiji.

Nouvelle Cythère (La), a name given to Tahiti by Bougainville in 1768.

Nu, see Dubouzet islet, New Caledonia.


175° W.
17
PHŒNIX GROUP
CANTON
ENDERBURY
BIRNIE
MC KEAN
PHŒNIX
SIDNEY
HULL
GARDNER
5° S
5° S
UNION GROUP
OATAFU
NUKUNONO
FAKAAFO
175° W.

204

Nuakata or Lydia, is east of the East cape of New Guinea; 1010 ft. high, thickly inhabited. 10° 17′ S., 151° E.

Nuare, on the great South Reef of New Caledonia, 3.5 m. SW. by S. from Kie.

Nubaru or Nubara, islet on the southeast coast of Murua. 9° 10′ S., 153° E.

Nubiam, Trobriand group. 8° 40′ 30″ S., 150° 52′ E.

Nufiluli or Nufiloli, of the Matema group, is a mile long and 200 ft. high. British protectorate was declared August 18, 1898.

Nugarba or Goodman, the southernmost of the Abgarris group, Bismarck archipelago. The north point is in 3° 23′ S., 154° 41′ E.

Nugatobe, a group of three small islands, Fiji. 17° 18′ S., 180° 29′ E.⊙

Nugent, islet off the east coast of Raoul, Kermadec islands.

Nugu consists of two islets, Pari sule and Pari pile, lying between Florida and Guadalcanar, Solomon islands. 9° 18′ S., 160° 15′ E.

Nugu, islet of Tongatabu on the northeast. 21° 05′ 30″ S., 174° 58′ 30″ W. **18.**

Nui, Netherland or Egg, was discovered in 1827. There are 8 islets on the east side of the reef. Although geographically of the Ellice group the people and language are derived from the Gilbert group. 7° 13′ 20″ S., 177° 14′ 30″ E.

Nuimbua, a low, wooded islet in Tupeti passage on the southeast coast of New Caledonia.

Nukapu, of the Matema group, is a mile long and 100 ft. high. People Polynesian. This was the place of Bishop Patteson's murder.

Nuku, islet of Tongatabu, Tongan islands. **18.**

Nuku akimoa or Sail-rock, islet of Uvea or Wallis; 15 ft. high.

Nuku atea, islet of Uvea; 200 ft. high.

Nukufetau or De Peyster group, Ellice islands, was discovered in 1819. 8–9 islets around a lagoon 7 m. in diameter, with an entrance on the northwest side. In 1881 the population was 250. North point is in 7° 56′ S., 178° 27′ 30″ E.

Nukuhiva or Marchand is the principal island of the Marquesas; 14 m. E-W., 10 m. N-S. Lofty mountains and fertile valleys, but the population in 1880 had been reduced to 800; twenty years before it was over 2000. 8° 57′ S., 140° 15′ W. (West end.) **23.**

Nuku ira, one of the Tiri group on the north coast of Vanua levu, Fiji.

Nukulaelae or Mitchell group, Ellice islands. A lagoon island 7 m. N-S., 2 m. E-W. 14 islets; 150 inhabitants in 1886. 9° 18′ S., 179° 48′ E.

Nukulakia, islet of Fakaafo. 9° 25′ S., 171° 14′ W.

Nukulau, a low, sandy, well wooded islet 0.3×0.2 m.; off Viti levu, Fiji. 18° 10′ 23″ S., 178° 30′ 30″ E.⊙

Nukulevu, Fiji, is small, fertile, inhabited. 17° 41′ 16″ S., 178° 39′ 10″ E.⊙

Nukumanu, an inhabited island west from Nuku mbasanga, Fiji. 16° 20′ 30″ S., 180° 36′ 40″ E.⊙

Nukumanu, see Tasman.

Nukumasanga, islet of Fakaafo. 9° 24′ 12″ S., 171° 12′ W.

Nuku mbasanga, one reef encloses this and Nuku mbalate; 10 m. north from Nanuku, Fiji. 16° 19′ S., 180° 45′ 20″ E.

Nukumbatu, islet 80 ft. high, off the north coast of Vanua levu, Fiji.

Nukumbati, a low, mangrove islet 0.3 m. N-S., 400 yds. wide. 16° 27′ 54″ S., 179° 00′ 45″ E.⊙

Nukunamu, islet of the Tongan group.

Nukunau or Byron, Gilbert islands, was discovered by Commodore Byron July 2, 1765; 8×1.5 m.; in 1872 population was 5000. 1° 23′ S., 176° 34′ E.

Nukunono or Duke of Clarence, in the Tokelau or Union group, was discovered by Captain Edwards in the *Pandora* in 1791; 7.2 m. N-S., 5 m. E-W.; of triangular form, with 93 islets on the reef. 9° 05′ S., 171° 46′ W. British protectorate declared June 21, 1889. **17.**

Nukuor, Monteverde or Dunkin of the Caroline islands, was discovered in 1806 by Juan B. Monteverde; 12–14 m. in circumference. About 150 Polynesian inhabitants who hold to their primitive religion; the language is said to be pure Maori. 3° 52′ N., 154° 56′ E. **4.**

Nukusemanu, islet on the east side of the reef of the same name in the Ringgold group, Fiji.

Nukusesuki, islet of Fakaafo. 9° 24′ 10″ S., 171° 12′ W.

Nukutapipi or Margaret, of the Paumotu archipelago, was discovered by Turnbull March 6, 1803, and named for his ship. It is low, wooded, 2 m. in circumference. 20° 42′ 21″ S., 143° 03′ 48″ W.⊙

Nukutavake, Lagoon or Queen Charlotte, of the Paumotu archipelago, was discovered by Wallis in 1767. 18° 43′ 19″ S., 138° 47′ 13″ W.⊙ **22.**

Nukutolu, three uninhabited islets 4 m. from Yathata in the Lau group, Fiji.

Nukutu, islet off north coast of Vanua levu, Fiji.

Numfoor. 1° 01′ S., 134° 45′ E.

Nunga, a rock, Fiji. 16° 55′ S., 177° 20′ 30″ E.⊙

Nungna, islet on Boussole reef southeast from Vanikoro, New Hebrides.

Nunuan, islet of the Louisiade archipelago, 200 ft. high.

Nuotaea, islet of Apaiang, Gilbert islands. 1° 53′ N., 172° 56′ 10″ E. **7.**

Nupani, one of the Matema islands. 10° 04′ S., 165° 40′ E. British protectorate declared August 18, 1898.

Nura, islet in south part of Indispensable strait near Malaita, Solomon islands. 9° 33′ S., 160° 45′ E.

Nusa and Nusalik, islets off the coast of New Ireland, Bismarck archipelago.

Nuulua, islet east of Upolu, Samoan islands; 120 ft. high.

Nuutele, islet east of Upolu, Samoan islands; 200 ft. high.

Nuvera, islet off Vanua levu, Fiji. North point in 16° 28′ 50″ S., 178° 48′ 30″ E.

N'yaur or Angaur, southernmost of the Pelew islands; 4.5 m. NE-SW. 6° 50′ N., 134° 10′ E.

Oafuna, islet of Fakaafo. 9° 22′ 10″ S., 171° 12′ W.

Oahe, a name of Manihi, Paumotu archipelago.

Oahu, of the Hawaiian islands, the Wahoo of the old English charts, although not the largest is the principal island of the group. Its area is 384,000 acres; height at the Kaala mountains, 4030 ft.; and the population in 1896 was 40,205. On this is the capital city, Honolulu; also Pearl Lochs, an extensive harbor. **1.**

Oaitupu, see Vaitupu of the Ellice group.

Oandrau, low islet off Vanua levu, Fiji. 16° 34′ 30″ S., 178° 47′ E.⊙

Oatáfu, better Atafu of the Union group.

Oatara, islet on extreme east of reef of Raiatea, Society islands.

Oba or Lepers, New Hebrides. Often written Omba or, with the article, Aoba (b=mb). About 17 m. long and 4000 ft. high. Natives have a good character, and there is a station of the Melanesian mission on the northern side. The name Leper was given under a mistaken diagnosis; inhabitants were not lepers. **12.**

Obelisk or Sugar-loaf, islet south of Huapu, Marquesas islands. **23.**

Obelisk, one of the Taumaco group.

Obi, islet of Yap, Caroline islands.

Observation or Mono, Solomon islands. 7° 24′ 30″ S., 155° 34′ 01″ E.

Observation, on the north coast of Duau, D'Entrecasteaux group. 9° 43′ 53″ S., 150° 44′ 43″ E.

Observation, on the north coast of New Guinea. 2° 36′ S., 140° 42′ 11″ E.

Observatory, small, stony islet in Nares harbor, Admiralty island. 1° 55′ 10″ S., 146° 41′ E.

Observatory, at Balade, New Caledonia. See Puduié.

Observatory, see Loa, Fiji.

Obstruction, of the Louisiade archipelago, a group so named because the islands block the passage between Nuakata island and East cape. They are Hana kubakuba, Lelei gana, Iabama, Banibani siga.

Obula, islet west of Duau, D'Entrecasteaux group. 9° 49′ S., 150° 46′ E.

Ocean or Curé, of the Hawaiian group, is an atoll 14.7 m. in circumference, 56 m. west from Midway island. There is one sand island 1.5×0.7 m.; another called Green, and two islets in the southeast corner. 28° 25′ 45″ N., 178° 29′ 45″ W. Taken possession of by the Hawaiian government during the reign of Kalakaua. **2.**

Ocean, see Bonabe, Gilbert islands.

Ocheou of Belcher is Hau of the Paumotu archipelago. **21.**

Odia, see Wotje of the Marshall islands.

Odia, see Ailinglablab, Marshall islands.

Oema, of the Solomon islands, is 10 m. NW. from Cyprian Bridge island, and about 800 ft. high. 8° 40′ S., 156° 05′ E. Oema atoll is 2 m. north from Oema island. It has a lagoon and several islets.

Oeno, low and uninhabited island 65 m. NW. by N. from Pitcairn. Discovered by Captain Henderson of the *Hercules*. 24° 00′ 30″ S., 130° 40′ W.

Ofalaga, islet of the Tongan group. 19° 37′ S., 175° 34′ W.

Ofiti, see Tepoto of the Paumotu archipelago. **21.**

Ofolanka, islet on the same reef with Buhi in the northwest part of the Tongan group.

Ofu, of the Samoan islands, has an area of 9 sq. m., and is 1020 ft. high. By convention proclaimed February 16, 1900, it came under the jurisdiction of the United States. The west point is in 14° 11′ S., 169° 36′ W. **15.**

Ofu, islet of the Tongan group.

Ogasawara, see Bonin.

Ogea, see Ongea, Fiji.

Ogle, a low islet of the Underwood group, Fiji. 17° 40′ S., 177° 14′ 30″ E.⊙ Named for Alexander Ogle, a marine of the United States Exploring Expedition who died at sea, August 12, 1839.

Oheteroa, see Rurutu of the Austral islands.

Ohiti, see Hiti. O is the article.

Oidi islet is east from Huéguénée, Loyalty islands.

Okimbo, Fiji, three islets on one reef, 4 m. E-W., 3 m. N-S.; desolate, uninhabited. 17° 03′ S., 180° 59′ E.⊙

Ola is the native name for Heron islet, Louisiade archipelago.

Olenea, see Ularua, Fiji.

Olevuga, islet northwest from Florida, Solomon islands. 9° S., 160° 04′ E.

Olimarao or Olimario, of the Caroline islands, was discovered by Lütke in 1828. There are two islets on a reef 5–6 m. in circumference; 200 inhabitants. 7° 43′ 30″ N., 145° 56′ 45″ E. **3.**

Ollap, islet of Tamatam, Caroline islands. 7° 38′ N., 149° 30′ E. **4.**

Olo, one of the Pleiades group northwest from Uea, Loyalty group.

Oloosinga of Wilkes is Olosenga, Samoan islands.

Olorua, islet in the Lau group, Fiji; 250 ft. high.

Olosenga, Samoan islands, has an area of 6 sq. m. and is 1500 ft. high. North point is in 14° 11′ S., 169° 32′ W. Manua group. Belongs to the United States.

Olot, islet of Maloelab, Marshall islands. 8° 46′ N., 171° 09′ 42″ E. **6.**

Oluksakel, islet of Korror, Pelew islands; long, narrow and rocky.

Olu malau, Las Tres Marias, or Three Sisters, Solomon islands, were discovered by Hernando Enriquez of the Mendaña expedition, May, 1568. The group lies north of San Cristóbal, extends 10 m. NNW-SSE.; flat, uninhabited, coral. **11.**

Omba, see Oba, New Hebrides.

Ombelim, islet on west side of Wotto, Marshall islands. 10° 10′ N., 167° 05′ E. **6.**

Ombi, small, uninhabited island of the Yasawa group, Fiji. 17° 30′ 30″ S., 177° 04′ E.⊙

Omene, low islet off Viti levu, Fiji. 16° 45′ 16′ S., 178° 38′ E.⊙

Onata, see Pegan. 0° 57′ N., 134° 21′ E.

Onavero, see Nawodo, Gilbert islands. **7.**

Oné or Honni, islet of Makin, Gilbert islands. 3° 16′ N., 172° 54′ 45″ E.

Oneaka, on the same reef with Kuria, Gilbert islands. 0° 16′ N., 173° 26′ 30″ E.

Oneata, north from Mothe, 12 m. southeast from Lakemba, Fiji. Within a barrier reef 26 m. round, 2.5×0.5 m.; 160 ft. high. East point is in 18° 24′ 30″ S., 181° 27′ 30″ E.

Oneeheow, an old English name of Niihau, of the Hawaiian group.

O'Neill, see Weitoa of the New Guinea region.

Oneke is perhaps identical with Onoatoa, Gilbert islands.

Onemok, islet of Kwadjaliu, of the Marshall islands.

One Tree, a low islet of the Yasawa group, Fiji. 16° 47′ 09″ S., 177° 26′ 08″ E.

Onevai, islet on north of Tongatabu. 21° 05′ S., 175° 05′ W.

Ongai, islet of Mokil, Caroline islands.

Ongea (Ogea), Fiji, consists of two islets, Ongea levu (large) and Ongea ndriti (small). The former is 4 m. long, 1–2 m. wide, 270 ft. high, densely wooded, has 80 inhabitants. The latter is 1.7 m. E-W., 1 m. N-S., 300 ft. high, uninhabited. North end of levu is in 19° 03′ S., 181° 30′ E. The centre of udriti is in 19° 07′ S., 181° 29′ E.

Ongombua, islet on the northeast coast of New Caledonia, containing about two acres of grass.

Oniop, islet of Lukunor, Caroline islands; 300 inhabitants. **4.**

Ono is northeast from Kandavu, Fiji; 4.5 × 3.5 m. Peak Mbualu, 1160 ft. high. Population in 1880 about 790.

Ono i lau, Fiji, consists of six islands, 3 volcanic, 3 coral. Group extends 5 m. NE-SW., and is 4 m. wide; highest peak, 370 ft. Population about 450. 20° 39′ S.

Onoatoa or Clerk of the Gilbert islands. 1° 51′ S., 175° 36′ E. Described by Rev. H. Bingham as 12 m. long, having a lagoon bordered by a reef on the western side, with a good boat channel near the centre. Islets are Tanyah, Bowerick, Sand, Otoeie, Hack, Taburari, Onutu, Teumah. Population, 3000. **7.**

Onoune, islet of the Caroline islands.

Onoup or Onupe, islet of Namonuito, Caroline islands.

Ontong Java. 5° 25′ S., 159° 30′ E. A reef 50 m. E-W., 20 m. N-S., with many densely peopled islets. Natives said to be of Polynesian origin. Only weapon a sling. Named by Tasman in 1643, afterwards identified with the Lord Howe of Captain Hunter, 1791.

Onua, islet off the north end of Alu, Solomon islands.

Onutu, islet of Onoatoa, Gilbert islands.

Opea, islet near the Roux group on the south coast of New Guinea.

Oparo, a name of Rapá.

Oputotara, islet of Tahiti on the south end of the barrier reef.

Oraluk, Bordelaise or San Agostino of the Caroline islands, was discovered in 1826 by Captain Saliz of Bordeaux. It is 2 m. long, 100 ft. high, coral. 7° 38′ N., 155° 09′ E.

Oreia, small, low and wooded island of the Rénard group, Louisiade archipelago.

Orlofé, islet, inhabited, off the north end of Alu, Solomon islands.

Ormed, islet of Wotje, Marshall islands. 9° 33′ 16″ N., 170° 10′ 58″ E.

Orokou, islet off the north point of Babeltop, Pelew islands.

Orolong, 1.5 m. long, off northwest point of Uruktapi, Pelew islands. 7° 18′ N., 134° 25′ E.

Ortega, islet of the Solomon islands. 8° 33′ S., 159° 48′ E. Named for Pedro de Ortega Valencia, an officer of the Mendaña expedition of 1567.

Ortzen, islet northwest from Cape Duperré on the north coast of New Guinea.

Orumbau, islet off the northwest coast of Malekula, New Hebrides. 16° 04′ S., 167° 21′ E.

Osasai, islet 225 ft. high, wooded, near Tagula in the Louisiade archipelago.

Osnaburgh, a name given by Wallis to Mururoa, Paumotu archipelago.

Osubu, a group of three islets, high and rocky, east from Avia in the Exploring islands, Fiji. 17° 10′ S., 181° 10′ E.⊙

Otafi, islet of Fakaafo. 9° 23′ S., 171° 13′ W.

Otaheite is Tahiti with the article, O Tahiti.

Otdia, a form of Odia, see Wotje.

Otea, the Great Barrier of Cook, is about 21 m. long and 10 in its greatest breadth. Central Peak rises to 2130 ft. This the largest of the islands to seaward of the gulf of Hauraki, New Zealand.

Otoeie, islet of Oneatoa, Gilbert islands.

Otooho, see Tetopoto of the Paumotu archipelago. **21.**

Otovawa, islet 0.7×0.5 m. in the Yasawa group, Fiji. South point is in 16° 56′ 40″ S., 177° 19′ 20″ E.

Ototolu, islet of Tongan group.

Oua, islet of Kotu, Hapai group, Tongan islands.

Oua Houka, see Huahuna of the Marquesas islands.

Ouap, of the New Guinea coast. 3° 24′ S., 143° 28′ E.

Ouap, see Yap of the Caroline islands.

Ouapou, see Huapu of the Marquesas islands. **23.**

Oudot, islet of Ruk, Caroline islands. 7° 24′ 10″ N., 151° 44′ 34″ E.

Ouessant or Tariwerwi is low and wooded, south from Wari, in the New Guinea region. 11° 10′ S., 151° 13′ E.

Ounalik, islet of Namonuito, Caroline islands. **4.**

Oura, see Takapoto, Paumotu archipelago.

Ourik, islet of Butaritari, Gilbert islands. 3° 11′ 15″ N., 172° 41′ E.

Ovaka, islet of the Tongan group.

Ovalau, Fiji, is 8 m. N-S., and 6 m. E-W.; 2089 ft. high. Levuka is the principal port. The observatory on the east side is in 17° 40′ 46″ S., 178° 52′ 40″ E.

Ovalu or Passage, Fiji, is 0.5 m. long, 104 ft. high (Vatu i thake). 17° 22′ 30″ S., 178° 48′ E.⊙

Ovau is between Fauro and Bougainville, Solomon islands; 1340 ft. high. 8° 48′ S., 156° E.

Ovawo, near Yasawa, Fiji, is 1.5 m. in circumference, 40 ft. high. 16° 47′ 30″ S., 177° 25′ E.⊙

Ové, islet south from Umboi in the Bismarck archipelago. Thickly populated.

Ovolau, see Ovalau, Fiji.

Oua raha is Santa Ana, Solomon islands. Owa riki is Santa Catalina. Natives are lighter colored and of finer physique than their neighbors.

Owen Stanley is Sabari or Sabarai of the Louisiade archipelago.

Paaba is on the northwest coast of New Caledonia, 6 m. east from Tandé. It is 5 m. N-S., and is inhabited by the Neneena tribe.

Paaio, islet in Banaré bay on the north west coast of New Caledonia.

Paama is 3 m. from the northwest point of Api, New Hebrides; 5 m. N-S., 1.2 m. E-W.; about 1900 ft. high. 16° 28′ S., 168° 12′ E.

Paanopa, a form of Bonabe.

Pachiai, islet of Andema, Caroline islands, at the northeast point of the reef.

Pacific is north of Rononga, Solomon islands. 7° 52′ S., 156° 30′ E. **II.**

Padeaids or Traitors, an extensive group of low islets, about 30 m. E-W., on the north coast of New Guinea. 1° 10′ S., 136° 45′ E.

Pagan, of the Marianas, is 8×2.5 m. and has three active volcanoes from 800–1000 ft. high. 18° 04′ N., 145° 42′ E. See map under Marianas.

Paguaiganique, islet on the southeast side of the reef of Andema, Caroline islands.

Paguenema, see Pakin, Caroline islands.

Pahare, islet on the eastern reef of Huaheine, Society islands.

Paho, north of Saibai on the south coast of New Guinea. 9° 18′ S., 142° 46′ E.

Paigo, see Boigu of the Talbot islands on the New Guinea coast. 9° 20′ S., 142° 29′ E.

Pakin, of the Caroline islands, was discovered by Lütke in 1828; 5 islets extending 5 m. NW-SE., Katelma, Ta, Tagaik, Kapenoas. Called also Pakeen and Peguenema. 7° 02′ N., 157° 47′ 30″ E. **5.**

Palakuru or Pigeon, near New Britain, in Bismarck archipelago. 4° 16′ S., 152° 21′ E.

Palao, another form of Pelew.

Palav, islet of Ontong, Java. 5° 05′ S., 159° 20′ E.

Palea, islet of Fakaafo. 9° 22′ S., 171° 12′ W.

Palilug or Goode, is small, 250 ft. high, in Torres strait. 10° 32′ S., 142° 09′ E.

Pallikulo, islet of Espiritu Santo, New Hebrides.

Palm, a large group in Halifax bay, on the Australian coast. 18° 42′ S., 146° 43′ E.⊙

Palm, of the Solomon islands. 7° 30′ S., 157° 47′ E.

Palmer, a high island in the Hudson group, Fiji. 17° 45′ S., 177° 07′ E.⊙

Palmerston, eight sandy islets on a reef enclosing a lagoon. Discovered by Captain Cook June 16, 1774, and named for Lord Palmerston, then First Lord of the Admiralty. 18° 04′ S., 163° 10′ W.

Palmyra or Samarang was discovered by Captain Sawle, of the American vessel *Palmyra*, November 7, 1802. There are several islets not over six feet high extending over an area of 5.7 m. E-W., 1.6 m. N-S. The position, according to Captain Skerrett, is 5° 49′ 04″ N., 162° 11′ 29″ W.; 50 islets. Taken for the Hawaiian Kingdom by Captain Zenas Bent, of Honolulu, in 1862. Annexed by Great Britain May 28, 1889. The proclamation, issued under Kamehameha IV., was as follows:

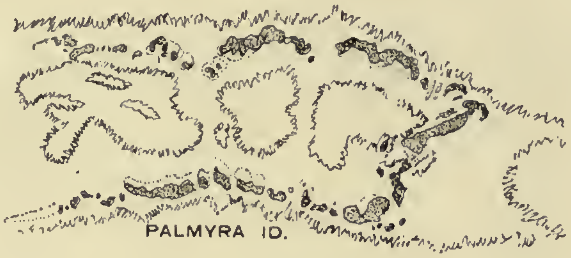


FIG. 9.

> "Whereas, on the fifteenth day of April, 1862, Palmyra island, in lat. 5 deg. 50 min. N. and long. 161 deg. 53 min. W. was taken possession of with the usual formalities by Capt. Zenas Bent, he being duly authorized to do so in the name of Kamehameha IV. King of the Hawaiian Islands.
>
> "Therefore, This is to give notice that the said island so taken possession of is henceforth to be considered and respected as part of the domain of the King of the Hawaiian Islands.
>
> (Signed) L. KAMEHAMEHA.
> Department of Interior, June 18, 1862. Minister of the Interior."

Pam, islet in Harcourt bay, New Caledonia.

Panabahai or Peak is a grassy island 200 ft. high, off the southwest point of Panatinani of the Louisiade archipelago. Pana is the native word for island. See Malay Pulo, Sulu Po.

Panabobaiana, west of the Duchâteau group, Louisiade archipelago; 0.7 m. in diameter; 75 ft. high. 11° 16′ 43″ S., 152° 21′ 37″ E.

Panabobo, eastern islet of the Montemont group, Louisiade archipelago; 50 ft. high.

Panakrusima or Earle of the Louisiade archipelago; 360 ft. high.

Panakuba, islet of Mabneian, Louisiade archipelago.

Panaman or Woody, islet 200 ft. high, on Bagana reef, Louisiade archipelago. 11° 28′ S., 153° 11′ E.

Panangaribu, islet near Pananumara, Louisiade archipelago.

Panantinian or Sharpe is an inhabited islet of the Calvados group, Louisiade archipelago.

Pananumara, in the Louisiade archipelago, is 1.3 m. E. by N.–W. by S.; 425 ft. high.

Panapompom, a wooded and inhabited island, 2 m. in diameter, 520 ft. high, 2 m. southeast from Panniet, Louisiade archipelago.

Panarairai, the smaller of the Jomard group, Louisiade archipelago.

Panaroran, with Baiwa and Panawadai in the Rénard group, Louisiade archipelago. 11° 07′ S., 152° 30′ E. Also called Eddystone; 540 ft. high.

Panarurawara is the midmost of the Duchâteau group, Louisiade archipelago; 75 ft. high. 11° 16′ S., 152° 21′ E.

Panasia or Real, of the Louisiade archipelago, is uninhabited, 2 m. long and very narrow; 530 ft. high. 11° 09′ S., 152° 22′ E.

Panatinani or Joannet, of the Louisiade archipelago, is an inhabited island 10.5 m. long and 1110 ft. high. The northwest point is in 11° 10′ S., 153° 06′ E. **9.**

Panaudiudi is 1 m. long, 390 ft. high, northeast from Utian, Louisiade archipelago.

Panavaravara, inhabited island on the Calvados chain.

Panavi or Banepe = Banga Netepa of the Matema islands. 10° 17′ S., 166° 19′ E. British protectorate proclaimed August 18, 1898.

Panawadai, with Panaroran and Baiwa, in the Rénard group.

Panawaipona, the larger of the two islets of the Jomard group, 1×0.3 m. 11° 15′ S., 152° 09′ E.

Panawina, inhabited island of the Louisiade archipelago, 4 m. E-W., 945 ft. high. 11° 11′ S., 153° E. **9.**

Panemote. 9° 28′ S., 151° 58′ E.

Panemur, islet of Andema, Caroline islands, at the south end of the reef.

Pangai, islet of Fakaafo. 9° 24′ 28″ S., 171° 12′ W.

Pangaimotu or Pangimotu, islet of Tongatabu. 21° 07′ 30″ S., 175° 08′ W.

Paniau, islet of Ponapé, Caroline islands.

Panniet or Deboyne, of the Louisiade archipelago, has an area of 10 sq. m.; 2000 population in 1890. 10° 41′ S., 152° 23′ E. The inhabitants make the best canoes and sell them for 10–50 stone adzes. (This is of former days.)

Panopea, see Bonabe.

Papakena, see Tureia of the Paumotu archipelago. **22.**

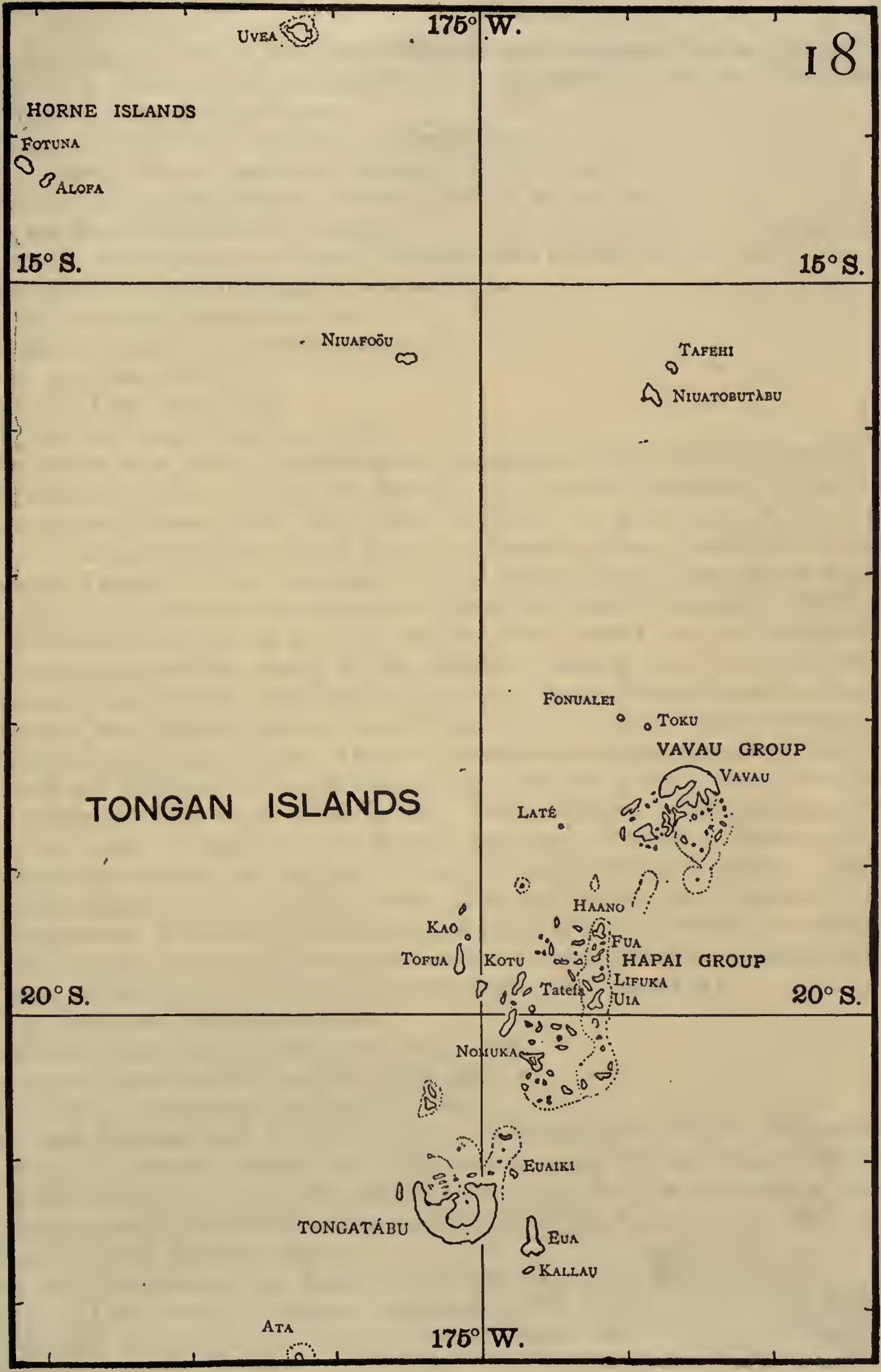
Paples, on the New Guinea coast; 250 ft. high, well wooded. 10° 33′ 20″ S., 150° 44′ 45″ E.

Parama or Bampton (Brampton), on south coast of New Guinea; 10–12 m. in circumference, inhabited 9° S., 143° 22′ E. Station of the London Missionary Society.

Paraoa, Hariri or Gloucester was discovered by Wallis in 1767. It is low and at present uninhabited. There is a stone structure at the southeast point. 19° 08′ S., 140° 40′ W. Paumotu archipelago. **21.**

Paraponpon, a small island a few miles south from Panniet of the Louisiade archipelago. 10° 47′ S., 152° 24′ E.

Paris, see Aasu on the north coast of New Guinea.


18
UVEA
175° W.
HORNE ISLANDS
FOTUNA
ALOFA
15° S.
15° S.
NIUAFOŌU
TAFEHI
NIUATOBUTÀBU
FONUALEI
TOKU
VAVAU GROUP
VAVAU
TONGAN ISLANDS
LATÉ
HAANO
KAO
TOFUA
KOTU
FUA
HAPAI GROUP
LIFUKA
Tatefa
UIA
20° S.
20° S.
NOMUKA
EUAIKI
TONGATÁBU
EUA
KALLAU
ATA
175° W.

212a

Pari, two islands off the northeast coast of Guadalcanar, Solomon islands. 9° 43′ 30″ S., 160° 46′ E. Pari pile is smaller than Pari sule, which is about 1 m. E-W. by half a mile.

Parivara, see Varivara, New Guinea.

Pariwara, two islets near Redscar bay, New Guinea.

Parry, a small group of the Bonin islands. 27° 40′ N., 142° 14′ E.

Parry, islet of Eniwetok, Marshall islands. 11° 21′ N., 162° 25′ E.

Parry, see Mauki of the Hervey islands.

Parseval is at the entrance to Port St. Vincent, New Caledonia.

Parum or Parram, islet of Ponapé, Caroline islands.

Pass, see Anchorage, Suvaroff group.

Passage, in Choiseul bay, Solomon islands.

Passage, see Ovalu, Fiji.

Passage, see Vatu i thake, Fiji.

Patik, islet of Ponapé, Caroline islands.

Patrocinio or Byer, of the Hawaiian group, was discovered by Captain Zipiani, of the Spanish ship *Nuestra Señora del Pilar* in 1799; 3 m. long, volcanic. Called Byer by Captain Morrell, July, 1825. Place doubtful. 28° 30′ N., 177° 18′ E. It has been expunged from the British Admiralty charts on perhaps insufficient grounds.

Paumotu, Tuamotu or Low archipelago. Coral atolls extending over sixteen degrees of longitude. The native name means "Cloud (or bunch) of islands." Quirós, in 1606, saw several islands of the group, but these cannot now be determined so great is the similarity among all these islands. Many of the great navigators observed several islands, but Wilkes (1841) gave more accurate details, and to his surveys the modern charts are chiefly indebted. The inhabitants vary from the Vitian to the Tahitian type. There are 78 atolls each numbering many islets; 18 atolls are inhabited, the population being estimated at 8000, nearly all of them Protestants. Flies are very troublesome. Principal exports, copra and pearl shell, in the hands of American and British merchants of Tahiti. France took the archipelago in 1844 and the French Resident is stationed on Fakarava. The detached islands to the southeast, Ducie, Henderson, Pitcairn and Oeno are British possessions. From the structure of the atolls their form is continually changing, and occasionally in severe storms the sea breaks over them destroying the inhabitants and making radical changes in the geography. **20, 21, 22.**

Pavuvu, see Russell, Solomon islands.

Peacock, see Ahii of the Paumotu archipelago. **20.**

Peak, see Panabahai of the Louisiade archipelago.

Peard, a name of Mangareva or Gambier. **22.**

Pearl and Hermes reef, Hawaiian islands. Discovered in 1822 by two whalers, *Pearl* and *Hermes* wrecked near the eastern end on the same night, within ten miles of each other. An atoll extending E-W. 16 m., N-S. 9 m., or 40 m. in circumference, with 12 islets, the southeast one in 27° 47′ 50″ N., 175° 51′ W. **2.**

Peddlar, see Arno, Marshall islands.

Peel, one of the Coffin group, Bonin islands. 27° 08′ N., 142° 15′ E.

Pegan, St. David, Freewill or Onata. Reported by ship *Warwick* in 1761. Atoll 14 m. N-S., with 4 low islets; inhabited. Under the Dutch flag. 0° 57′ N., 134° 21′ E.

Pegue, one of the Hermit islands. 1° 35′ S., 144° 58′ E. **8.**

Peihi, islet on the west reef of Huaheine, Society islands.

Peka, high island of Fiji. 16° 52′ 54″ S., 177° 26′ 06″ E.⊙

Pele, northeast from Faté, New Hebrides; 2 m. long, 300 ft. high; Polynesian inhabitants.

Pelelep, of Duperrey is Pingelap, Caroline islands.

Peleliu or Pililu, of the Pelew islands, extends 3 m. NE-SW. 6° 58′ N., 134° 16′ 15″ E.

Pelew or Palao, the Arrecifos of Villalobos, who discovered them in 1543, extend about 85 m. N-S., while the greatest breadth does not exceed 7 m. A barrier reef with many passages extends the whole length of the group. The population in 1875 was 10,000; less than a century before it was 40,000. No pestilence, no massacres, simply want of energy. Semper says: "The iron of the European followed too close upon the stone of the savage." The six principal islands are N'yaur on the south, Peleliu, Eil Malk or Irakong, Uruktapi, Korror (seat of government), and Babeltop, with many islets.

Pelican, on the Australian coast. 13° 53′ S., 143° 52′ E.

Pell, see Lisiansky of the Hawaiian group.

Pémé, the northeast islet of the Hermit group. 1° 29′ S., 145° 06′ E.

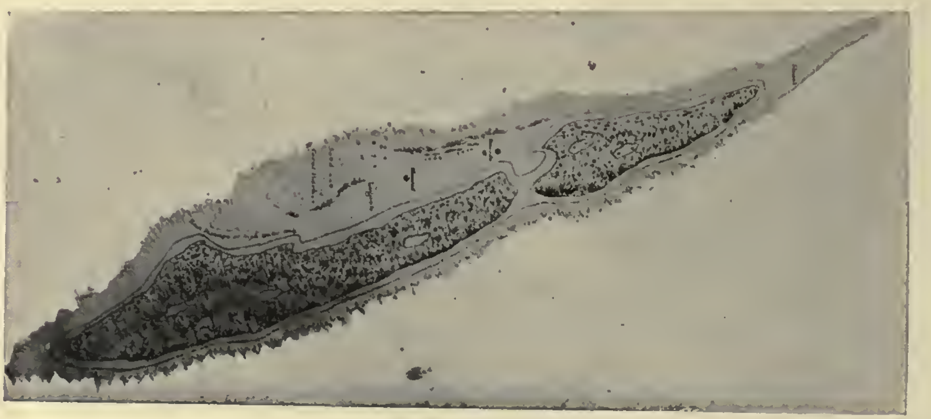


FIG. 10. PERU.

Penantipode, a name sometimes given to Antipodes island, New Zealand.

Pender, a circular islet of the Engineer group, Louisiade archipelago.

Penrhyn, see Tongareva.

Pentecost, see Arag of the New Hebrides.

Percy, low and wooded, 2 m. long, in Cloudy bay, on southeast coast of New Guinea.

Peregrina (La), see Gente Hermosa. **15.**

Peroat, see Peru of the Gilbert islands.

Perry, a high island of the Hudson group, Fiji. 17° 41′ 30″ S., 177° 05′ E.⊙

Peru, Sunday, Maria, Eliza, Peroat or Francis, was discovered by Captain Clerk of the ship *John Palmer* in 1827; 11 m. long, 6–8 ft. high. Population about 2000. Southeast point is in 1° 27′ 35″ S., 176° 05′ W.

Pescado (Isla de), discovered by Quirós February 21, 1606. Perhaps the same as San Bernardo, or even Solitaria.

Pescadores, see Bikini, Marshall group, or Rongelab.

Petat, off west side of Bouka, Solomon islands. 5° 09′ s., 154° 30′ e.

Philip, see Sorol of the Caroline islands.

Philip, islet at the entrance of Makira harbor, San Cristóval, Solomon islands.

Phillips, a name given to Makemo, Paumotu archipelago, by Trumbull in honor of Sir Richard Phillips, late Sheriff of London.

Phœbe, see Baker, also Tamana, Gilbert islands.

Phœnix, a group of 8 low, scattered islands. For position see the islands composing it, Gardner or Kemin, Hull, Sydney, Phœnix, Birnie, Enderbury, Canton, McKean. **17.**

Phœnix, the nomenclator of the previous group, is a mile long and half as broad, 18–20 ft. high. Formerly had deposits of guano, but was worked out in 1871. British protectorate was proclaimed June 29, 1889. 3° 47′ s., 170° 43′ w.⊙

Piano, one of the Hermit group. 1° 34′ s., 144° 56′ e.

Piedu, island 540 ft. high in Bougainville strait, Solomon islands. 6° 52′ s., 156° 09′ e.

Piele, near Nguna, New Hebrides; 2 m. long; inhabited.

Pig, see Nimoa of the Louisiade archipelago.

Pig, see Ulu of the Bismarck archipelago.

Pigen, islet of Aurh, Marshall islands.

Pigeon, on the Australian coast. 12° 31′ s., 143° 18′ e.

Pigeon, near Moresby island, New Guinea; 60 ft. high.

Pigeon, see Credner of the Bismarck archipelago.

Pigeon, see Palakuru of the Bismarck archipelago.

Pikela or Lydia of the Caroline islands. 8° 38′ n., 147° 13′ e. Considered doubtful. **3.**

Pikelot or Coquille, of the Caroline islands, was discovered by Duperrey July 3, 1824, and by him called Bigalli. It is but 300 yds. in diameter, low and uninhabited. Lütke places it in 8° 09′ n., 147° 42′ e. **3.**

Pikhat, islet of Butaritari, Gilbert islands. 3° 13′ 10″ n., 172° 40′ e.

Pileni, inhabited island 1 m. nw-se., 100 ft. high, in the Matema group. British protectorate declared August 18, 1898.

Pililu, see Peleliu, Pelew islands.

Pilipal, islet of Namonuito, Caroline islands.

Pilot, islet at the mouth of Requin bay, Espiritu Santo, New Hebrides.

Pinaki, a form of Nganati.

Pine, see Huégnénée, Loyalty islands.

Piner, a low island of the Tiri group, off Vanua levu, Fiji. 16° 23′ 54″ s., 179° 08′ 25″ e.⊙

Pines (Isle of), lies southeast from New Caledonia and belongs to France; 11.5 m. nw-se.; 880 ft. high. About 800 natives of Papuan stock and formerly cannibals. Here the French missionaries took refuge in 1847 when driven by the natives from Balade in New Caledonia. 22° 39′ 20″ s., 167° 28′ e. **13.**

Pingelap, Musgrave or MacAskill, of the Caroline islands, was discovered by Captain Musgrave in the *Sugar Cane*, 1793; and again by Captain MacAskill of the ship *Lady Barlow* in 1809. Three islands compose the group which is 2.5 m. in diameter; Pingelap is the southern and principal, Taka is small, and Tugulu (Chikuru) is the northern. They are well wooded and have about 900 inhabitants, of light color. 6° 12′ n., 160° 53′ e. **5.**

Pionne, islet of Banaré bay on the northwest coast of New Caledonia,

Piper, a group on the Australian coast. 12° 15′ S., 143° 14′ E.

Pipoa, on the Australian coast. 14° 07′ S., 144° 32′ E.

Piron or Yeina is 11 m. northwest of Tagula in the Louisiade archipelago. Inhabitants warlike.

Pise or Pis, islet of Ruk, Caroline islands. 7° 42′ 30″ N., 151° 46′ E.

Pisonia, one of the Wellesley group in the Gulf of Carpentaria, northeast from Mornington. 16° 30′ S., 139° 32′ 30″ E.

Pitcairn was discovered by Carteret July 2, 1767. Supposed by some to be the Encarnacion of Quirós; 2.2 m. E-W., 1 m. wide, 1000 ft. high. Named for a relative of the Major Pitcairn who fired the first shot in the American revolution. Most interest attaches to this island from the mutiny of the *Bounty* in 1789. These mutineers were not the first inhabitants, however, for skeletons buried with stone adzes and a pearl shell not found now on the island, have been unearthed in several places. British protectorate proclaimed August 18, 1898. Adamstown is, according to Beechey, in 25° 03′ 37″ S., 130° 08′ 23″ W.

Pitt, a small, low, wooded island on the New Guinea coast. 10° 35′ 20″ S., 151° 02′ 50″ E.

Pitt, see Makin of the Gilbert islands.

Pitt, see Rangiauria, one of the Chatham islands.

Pizaras, islet of Namonuito, Caroline islands. 8° 34′ 20″ N., 150° 32′ 30″ E. **4.**

Platform, islet in midst of reefs, Admiralty group. 2° 44′ S., 147° 03′ E.

Pleasant, see Nawodo of the Gilbert islands.

Pleiades, a group northwest from Uea, Loyalty islands. They are, beginning at the northeast end, North, Isénay or La Baleine, La Tortue, Fatouba, Huéguénée or Pine, Oidi, Deguala.

Poanopa, a way of spelling Bonabe.

Pollard Rock, a name of Gardner of the Hawaiian islands.

Pole, in Torres strait. 10° 12′ S., 142° 28′ E.

Poll, of the Three Sisters group in Torres strait. 10° 15′ S., 142° 49′ E.

Poloa, islet of Tongatabu on the northwest. 20° 05′ 30″ S., 175° 14′ 30″ W. **18.**

Poloat or Enderby, of the Caroline islands. In 1799 Ibargoitia discovered an island which he called Kata. Freycinet found it was two distinct islands, one of which he called Alet, the other Poloat or Pozoat. They are on a reef 6 m. E-W. Population about 100. 7° 19′ 25″ N., 149° 15′ E. The group is usually called Enderby, a name given by Captain Renneck in 1826 in honor of his employers, London merchants.

Pomodedere, in Cloudy bay on the New Guinea coast. 10° 17′ S., 148° 46′ E.

Pompom, islet off the south coast of Murua in the Kiriwina group. 9° 07′ S., 152° 31′ E.

Ponafidin, one of the Bonin islands.

Ponapé or Ascension was discovered by Lütke January 2, 1828; 12 m. N-S., 14.5 m. E-W.; 2861 ft. high; coral reef 60 m. in circumference, on which are many basaltic rocks or islets. Metalanien harbor, which is in 6° 51′ N., 158° 18′ E., has on the shores very interesting ruins (see *Geographical Journal, 1899*, p. 105; also, *La Isla de Ponape*, by Pereiro, 1895; both give maps of these ruins which were first noticed by Dr. L. H. Gulick of the American mission). Ponapé is the largest and most important of the Caroline islands. Fanua pei = Land of the holy places. **5.**

Pones, islet of Ruk, Caroline islands.

Ponui, in Auckland harbor, New Zealand.

Poporang, islet of Shortland, Solomon islands. **11.**

Porcupine, islet at base of Mont d'Or at the south end of New Caledonia; 300 ft. high, rocky and covered with fir trees.

Porondu or Contrarieté, islet on the southwest coast of New Caledonia; low and wooded.

Pororan, off the west coast of Bouka, Solomon islands. 5° 15′ S., 154° 30′ E.

Portland, three low, wooded islands in the Bismarck archipelago, the eastern one the largest; 2.5 m. long, inhabited. 2° 38′ S., 149° 40′ E.

Portland, see Waikawa, New Zealand.

Portlock, in Torres strait. 10° 07′ S., 142° 22′ E.

Possession, northeast from Banks in Torres strait. 10° 05′ S., 142° 20′ E.

Possession, in Endeavor channel. 10° 42′ S., 142° 23′ E. It seems probable that there is but one Possession island, but on the chart sometimes one, sometimes the other position is given.

Pott, one of the Belep group northwest from New Caledonia; 4 m. NW-SE.

Powell, islet near Pender in the Louisiade archipelago.

Pozoat or Poloat, eastern islet of Enderby group, Caroline islands. 7° 20′ N., 149° 17′ E.

Predour (Le) islet off St. Vincent bay on the southwest side of New Caledonia.

Predpriatie, see Akahaina, Paumotu archipelago. Named for Kotzebue's sloop of war.

Prince Frederick Henry, a low, flat island, 90 m. long, on the southwest coast of New Guinea, north of the Gulf of Carpentaria.

Prince of Wales, a group in Torres strait, comprising Thursday, Horn, Prince of Wales, Friday (Quarantine station), Goode and Hammond. 10° 40′ S., 142° 11′ E. ⊙

Prince William Henry, see Nengonengo of the Paumotu archipelago.

Prince William Islands, Tasman's name for the Fijian group.

Princessa, see Lib of the Marshall islands. **6.**

Proby, the name given by the discoverer, Captain Edwards, to Niuafoou, Tongan islands.

Prospect, see Washington.

Protection, see Leausan, off the northwest coast of Faté, New Hebrides. Leleppa, on the same coast, is also called Protection, or are they perhaps confounded?

Providence, see Udjelong of the Marshall islands.

Pudiué or Observatory, islet off the northeast coast of New Caledonia. Here was buried Huon de Kermadec, captain of the *Espérance* of D'Entrecasteaux' expedition. (Died May 7, 1792.)

Puen, islet, see Montravel, New Caledonia.

Pugelug, islet of the Caroline islands.

Pukapuka, a name given by traders to Tog in the Torres group.

Pukapuka, or Clerke, low, inhabited atoll of the Paumotu archipelago. 17° 23′ S., 138° 35′ W.

Pukapuka, the north island of the Danger group, 80 ft. high. Population, 375; coconut trees abundant. 10° 53′ S., 165° 45′ 30″ W.

Pukapuka, Henuake, Honden or Dog, was discovered by Lemaire and Schouten April 10, 1616; 330 m. west from Manahiki, and consists of three islets around a fine closed lagoon. The first *John Williams* was lost here in 1864. Uninhabited, but it is said that there are snakes there. 14° 55′ 40″ s., 138° 47′ 36″ w.⊙ Must not be confounded with Danger island. **22.**

Pukararo (*raro* = leeward), one of the islets of Vairaatea, Paumotu archipelago. North end is in 19° 18′ s., 139° 18′ w. **22.**

Pukaruha, or Serle, was discovered by Captain Wilson in the *Duff* May 28, 1797, who named it for the author of *Horæ Solitariæ;* 7.5×2.2 m., 12 ft. high, with closed lagoon; 120 inhabitants. Southeast extreme is in 18° 22′ 30″ s., 136° 58′ 30″ w. (Beechey.) **22.**

Pukarunga (*runga* = windward), islet of Vairaatea, also called Egmont; discovered by Wallis in 1767. 19° 18′ s., 139° 18′ w. **22.**

Puketutu or Neckes, in Manukau harbor, New Zealand.

Pully, one of the Tiri group, off Vanua levu, Fiji. 16° 25′ 24″ s., 179° 07′ e.⊙

Pulo Anna or Current, of the Pelew group, is half a mile long, low, inhabited. Pulo is the Malay for island. 4° 38′ n., 132° 02′ e.

Pulo Marière or Warren Hastings, Caroline islands, was discovered in 1761. Low, inhabited; natives resemble Malays. 1.5 m. n-s. 4° 20′ n., 132° 28′ e.(?)

Pulo Suge or Pulusuk, see Suk of the Caroline islands. **4.**

Pulo Wat, see Fanadik, Caroline islands.

Puna, northernmost of the Malume group, Bismarck archipelago. 3° 10′ s., 154° 25′ e.

Punawan, largest of the Duperré group, Louisiade archipelago.

Puramatara, islet off Cape Surville, San Cristóval, Solomon islands.

Purdy, a group of which the islands were by Krusenstern named Bat, Mole and Mouse. 2° 55′ s., 146° 28′ e. The inhabitants resemble Admiralty islanders. **8.**

Puynipet, one of the many forms of Ponapé.

Pylstaart (Tropic Bird), see Ata of the Tongan islands. Tasman's name.

Pyramid, islet of Malaita, Solomon islands.

Qakea, islet on the east coast of Vanua Lava, New Hebrides, at the south entrance to Port Patteson. Here the language of Mota is spoken.

Qamea, the Fijian orthography of Ngamea, Fiji.

Queen Charlotte, see Akiaki, Paumotu archipelago. **22.**

Queen Charlotte, see Nukutavake, Paumotu archipelago. **22.**

Quernel, islet on the southwest side of New Caledonia.

Quirosa, a name of Ponapé, Caroline islands.

Quoin, on the Australian coast. 12° 25′ s., 143° 29′ e.

Quoin, rock islet a mile southeast from Mugula, south coast of New Guinea.

Quoin or Tua, southeast from Orangerie bay, south coast of New Guinea.

Quoy or Krudu, on the New Guinea coast, extends 8 m. e-w., and is well wooded.

Raberabe, low island of Fiji. 16° 57′ 25″ s., 178° 43′ 20″ e.⊙ Also Rabi Rabi.

Radogala, see Rongelab, Marshall islands.

Raeffsky, a group of the Paumotu archipelago, discovered by Bellingshausen in 1820. Consists of Tepoto, Tuinaka and Hiti. **21.**

Rahiroa, see Rangiroa, Paumotu archipelago. **20.**

Raiatea or Ulietea, of the Society islands, is about 30 m. in circumference, and the highest peak is 3389 ft. Population, 1400; all Protestants. Tahaa is within the same reef and there are many islets between them. 16° 40′ s., 154° 40′ w. **20.**

Raine, in Torres strait. 11° 35′ 50″ s., 144° 02′ 20″ e.

Rairoa, see Rangiroa, Paumotu archipelago. **20.**

Rakaanga or Reirson lies about 20 m. nnw. from Monahiki. Discovered by Bellingshausen in 1820, who called it Grand Duke Alexander. Captain Patrickson called it Reirson in 1822. Population, about 350. No lagoon. 10° 02′ s., 161° 05′ 30″ w. British protectorate declared August 9, 1889.

Rakino, in Auckland bay, New Zealand.

Raki Raki, high island off Viti levu, Fiji. 17° 20′ 20″ s., 177° 59′ 30″ e.⊙

Rakiura, the Maori name of Stewart island, New Zealand.

Ralick, a name given to the western chain of the Marshall islands.

Rambi (Rabi), high, inhabited island of Fiji; 8.7 m. ne-sw., 4.5 m. wide, 1550 ft. high. North point is in 16° 24′ 40″ s., 180° 08′ e.

Ramos (Los), a name given by both Gallego and Figueroa to Malaita, Solomon islands. 8° 19′ s., 160° 09′ e.

Ramung, islet on the northern side of Yap, Caroline islands.

Ranai, a form of Lanai, Hawaiian islands.

Rangiauria or Pitt, the southeastern of the Chatham islands, New Zealand.

Rangiroa, Rahiroa, Vliegen, Deans or Nairsa, is an extensive atoll with many islets; 66 m. long, inhabited. (Wilkes, I., 337.) 15° 05′ 15″ s., 147° 58′ 34″ w. **20.**

Rangitoto, a volcanic island in Auckland harbor, New Zealand.

Rano, islet on the northeast coast of Malekula, New Hebrides. **12.**

Raoul or Sunday was discovered by D'Entrecasteaux March 15, 1793; 12 m. in circumference, 1627 ft. high. Of the Kermadec group, belonging to New Zealand. 29° 20′ s., 178° 10′ w.⊙ Joseph and Ange Raoul were pilots on the *Recherche*.

Raoul was represented on former charts as an island of some size between Gicquel and Willaumez in the Bismarck archipelago. It is now found to be part of a mountainous peninsula of New Britain. **10.**

Rapa or Oparo was discovered by Vancouver December 22, 1791; about 20 m. in circumference, and 2100 ft. high. Natives do not know the name Oparo, but call the island Lappa (Rapa). Climate delightful. When discovered population numbered 1500 fine Polynesians resembling Maoris; February 23, 1882, there were but 100 all told. On six hills there are stone fortifications like the Rapanui terraces. Natives make a thick, heavy kapa. French protectorate in 1844; island annexed to France February, 1882. See account by Captain Vine Hall, *Proc. Roy. Geog. Soc.*, June, 1869. 27° 36′ s., 144° 22′ w.

Rapaiti, islet of Rapa. 27° 38′ s., 144° 15′ w.

Rapanui or Easter, said to have been seen by Davis in 1686. Admiral Roggewein saw it first on April 6, 1722 (Easter Sunday). Cook saw it in 1774. It is of triangular form, the longest side measuring 13 m. ne-sw. Volcanic with trachytic lava and obsidian. The inhabitants are Polynesian from Rapa, and they call their island "Te Pito o te honua," the navel of the earth. The most interesting remains on the island are the huge images so often described, and other relics of ancient inhabitants. Rapanui was surveyed by Beechey in 1825, and by H. M. S. *Topaze* in November, 1868. For full account see *Anuario Hidrografico de la Marina de Chili*, *1881*, pp. 164–190., Santiago.; *Tour du Monde*, XXXVI., 225. The best account is by W. J. Thompson, U. S. Navy, in the *Report of the U. S. Nat. Museum*, 1889, p. 447. From this the map is copied. 27° 08′ S., 109° 25′ W.

Raputata or Welle, also called Sanaroa, of the D'Entrecasteaux group, is low, 10 m. N-S., 8 m. E-W.. About 250 inhabitants. 9° 38′ S., 151° E. **9.**

Rara, western of Sloss group, Louisiade archipelago.

Rara ni Tinka, a name of Tavuka, Fiji.

Raraka, of the Paumotu archipelago, was discovered October 1, 1831, by Captain Ireland of the brig *Adhemar*. It is triangular, 15 m. on a side. Lagoon has deep blue water. (Wilkes, I., 330.) Inhabited. West point is in 16° 08′ S., 145° 00′ 40″ W.

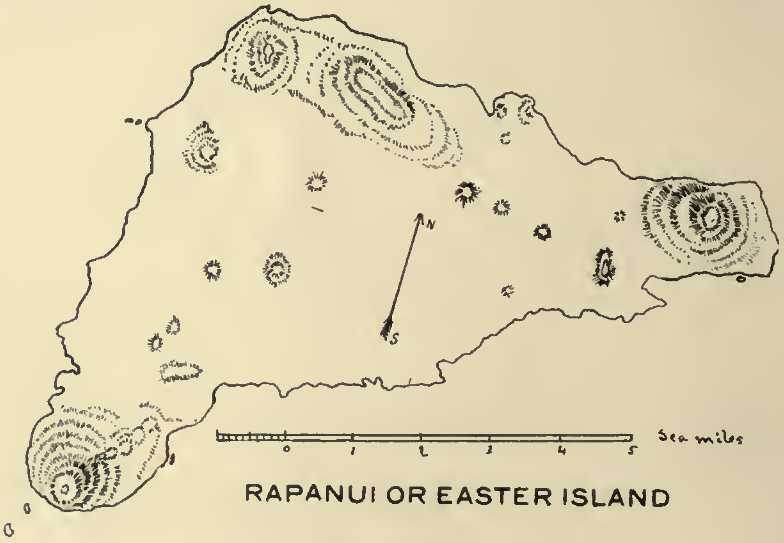


FIG. 11.

Raroia or Barclay de Tolly was discovered by Bellingshausen in 1820; of the Paumotu archipelago; population, 75. The north point is in 15° 56′ S., 142° 22′ W.

Rarotonga, a beautiful island of the Hervey group, was discovered by John Williams in 1823; at least he gave the first authentic report of it. It is about 30 m. in circumference, volcanic, and very fertile. Mt. Tervanga is 2920 ft. high. Population, 2000. English protectorate declared in 1888. 21° 20′ S., 160° W. **23.**

Rat, in Fortescue strait, New Guinea. 10° 36′ 35″ S., 150° 54′ E.

Ratack or Radack, the eastern chain of the Marshall islands.

Rativa, islet on the coast of Vanua levu, Fiji. 16° 44′ 20″ S., 179° 40′ 30″ E.⊙

Raur, southeast islet of Wolea, Caroline islands; inhabited. 7°21′30″N., 143°57′30″E. **3.**

Ravahere, see Manaka, Paumotu archipelago. Some refer it to Marakau or Danahaida.

Ravaivai, see Vavitao of the Austral islands.

Raven, see Ngatik of the Caroline islands. **5.**

Ravenga, islet off Port Patteson, Vanua Lava, New Hebrides. 13° 48′ S., 167° 30′ E. Here the language of Motlav is spoken.

Ravu ravu, off Vanua levu, Fiji; 1.5×0.7 m. Inhabited. 16° 27′ 24″ S., 178° 56′ 10″ E.⊙

Razor, two islets near Sideia, New Guinea; 200 ft. high.

Real, see Panasia, Louisiade archipelago.

Reao or Clermont-Tonnere was discovered by Duperrey in 1822. A low, inhabited atoll, 10–11 m. long and very narrow. Paumotu archipelago. Northwest end is in 18° 16′ 50″ S., 137° 09′ 06″ W. **22.**

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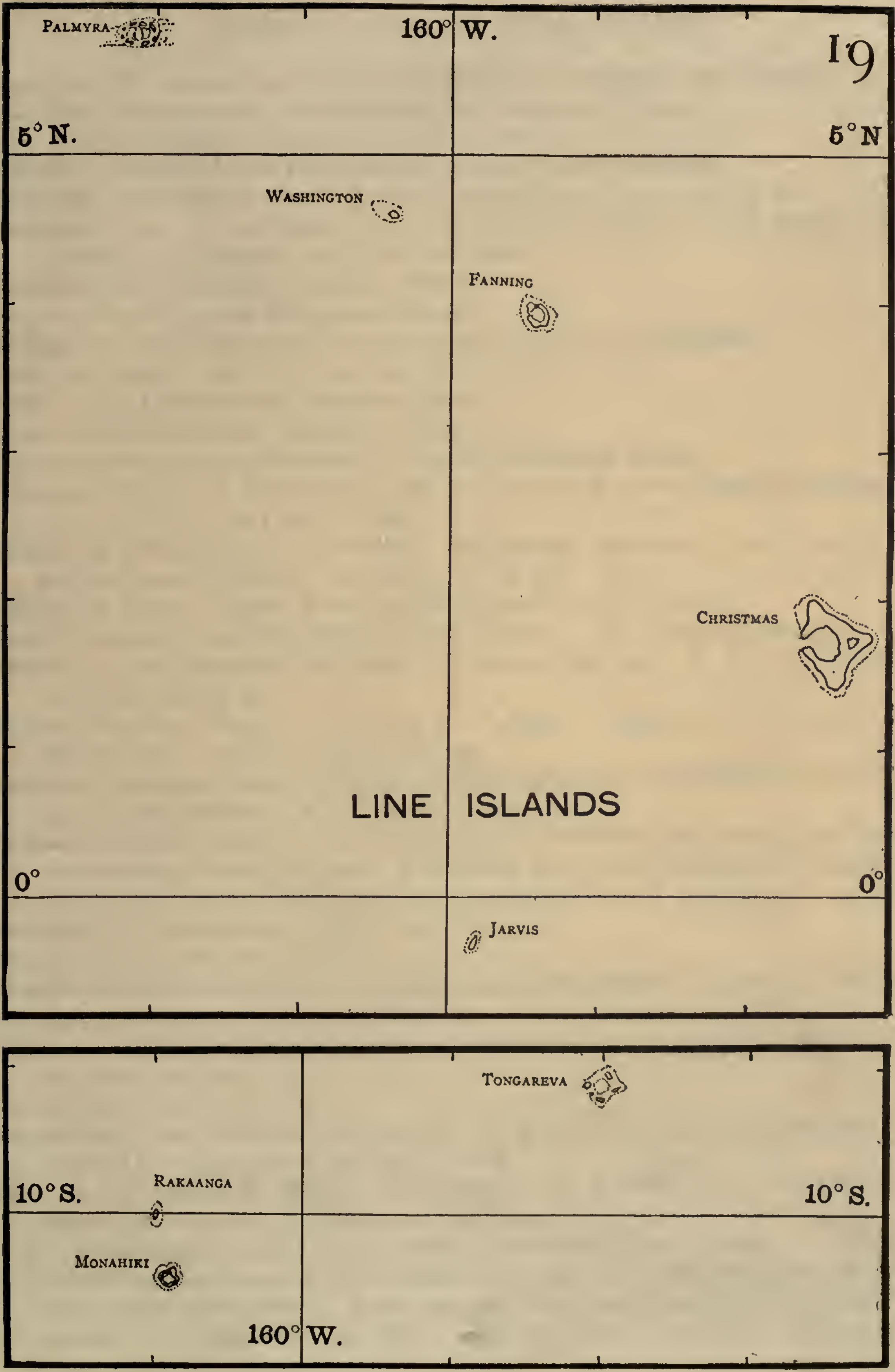

PALMYRA
160° W.
5° N.
5° N
WASHINGTON
FANNING
CHRISTMAS
LINE ISLANDS
0°
0°
JARVIS
TONGAREVA
RAKAANGA
10° S.
10° S.
MONAHIKI
160° W.

Recherche (Ile de la), name given by the French to Vanikoro, New Hebrides.

Recreation, of Roggewein, is Makatea of the Paumotu archipelago.

Red, on the Australian coast. 10° 50′ S., 142° 20′ E.

Redika, a wooded islet on the Great South Reef of New Caledonia.

Redlands, off Sandwich island, Bismarck archipelago. 3° S., 150° 45′ E.

Redlick, a ring of low islands on a reef 4.5×2 m., with a closed lagoon, in the Louisiade archipelago. 10° 50′ S., 152° 30′ E.

Redman, islet of Choiseul, Solomon islands.

Reef, see Matema group, Santa Cruz islands.

Refuge, islet of Bougainville, Solomon islands, near Cape Friendship.

Reid, Fiji; high. 17° 57′ 20″ S., 181° 38′ 30″ E.⊙

Reid, islet of Guadalcanar, Solomon islands.

Reid, a name of Tuinaka, Raeffsky islands. **21.**

Reirson, name given to Rakaanga by Captain Patrickson in 1822.

Reitoru, Hikuera or Bird, a low, uninhabited island of the Paumotu archipelago. 17° 48′ 10″ S., 143° 04′ 52″ W. **21.**

Rekareka or Goodhope of the Paumotu archipelago; inhabited; 5 m. NE-SW. by 4 m. Boat entrance to lagoon. 16° 48′ S., 141° 35′ W.⊙ **21.**

Remalum, islet of Faitruk group in Ruk lagoon, Caroline islands.

Remski Korsakow, see Ailinginae, Marshall islands. Also Rimski-Korsakoff.

Rénard or Fox, Louisiade archipelago; 11 islets within reef. H. M. S. *Rénard*, 1879. 10° 49′ S., 152° 58′ E.

Rénard, Solomon islands; 1.5 m. long, 220 ft. high. Named for British war vessel, *Rénard*, 1880. 7° 41′ S., 156° 32′ E. **II.**

Rendova, Solomon islands; volcanic, 2500 ft. high, densely wooded; 18 m. N-S., 8 m. E-W. North point is in 8° 24′ S., 157° 15′ E. **II.**

Rennell, Solomon islands. Two islands, Mongiki = Bellona and Mongava = Rennell, discovered by Butler in 1794. Population said to be Polynesian. British protectorate declared August 18, 1898. West end 11° 40′ S., 159° 55′ E.

Rennell, in Torres strait. 9° 45′ S., 143° 15′ E.

Renny, see Aivo, Solomon islands.

Resolution, off southwest coast of Middle island, New Zealand. Named for Cook's ship.

Resolution, see Tauere, Paumotu archipelago.

Révolution (Iles de la), a name given by Marchand to the northwest group of the Marquesas in 1791.

Reynold, see Vanua kula, Fiji.

Reynolds, of the Underwood group, Fiji. Named for William Reynolds (afterwards Admiral). 17° 43′ 10″ S., 177° 12′ 10″ E.⊙

Rica de Oro, Rica de Plata, two islands of the Bonin group. For years their fabled riches were an El Dorado to the Dutch navigators.

Rich, see Bagabag in Astrolabe bay on the north coast of New Guinea.

Riche, of D'Entrecasteaux, is not an island but a bluff in Holnicote bay on the northeast coast of New Guinea. Riche was one of the naturalists on the *Espérance*.

Richmond, a low island of the Tiri group off Vanua levu, Fiji. 16° 25′ 24″ S., 179° 07′ 50″ E.⊙

Riff, north from Ronongo, Solomon islands. 7° 49′ S., 156° 26′ E.

Rikarika, western and largest of the Lebrun group, Louisiade archipelago; 360 ft. high. 10° 52′ S., 150° 57′ E.

Rimitara, Austral islands; 2–3 m. in diameter, 315 ft. high; inhabited. 22°40′S., 152°45′W.

Rimski-Korsakoff, see Ailinginae, Marshall islands.

Rimsky, a name of Rongelab, Marshall islands, on some charts.

Ringgold, Fiji; a high, volcanic group, not inhabited, comprising Budd, Maury, North, Holmes, De Haven; all named for officers of the Wilkes Expedition.

Riou, see Huahuna of the Marquesas islands.

Roahouga, see Huahuna of the Marquesas islands.

Roapoua, an old chart name for Huapu, Marquesas islands. Also spelled Roapua.

Robatu, see San Cristóval of the Solomon islands.

Robbe (Seal), islet in Marau sound, east end of Guadalcanar, Solomon islands.

Roberts (of Hergest) is Eiao of the Marquesas islands.

Roberts Isles, a name given by the *Daedalus* to the Marquesan group.

Rock, a low, inhabited island in Naloa bay, Vanua levu, Fiji. 16° 39′ 24″ S., 178° 39′ E.⊙

Rocky, a dark-colored rock with a scant covering of grass on the summit, on the southeast coast of New Guinea. 10° 41′ 25″ S., 150° 59′ 45″ E.

Rocky, see Sophia of the Ellice islands.

Rocky, islet northwest from Mornington island in the Gulf of Carpentaria. 16° 19′ S., 139° 24′ E.

Rofei, islet off Fauro, Solomon islands; 0.3×0.5 m. 123 ft. high.

Rogeia or Heath, off east end of New Guinea, 4 m. NW-SE.; 1 m. wide, 1215 ft. high; well wooded. 10° 38′ S., 150° 38′ E.

Roger Simpson, a name of Apamama, Gilbert islands.

Roi, islet of Kwadjalin, Marshall islands. **6.**

Roissy, off New Guinea. 3° 15′ S., 144° 03′ E.

Rokahanga, a chart name of Rakaanga, Paumotu archipelago.

Romanzoff, see Tikei of the Paumotu archipelago. **21.**

Romanzoff, see Wotje, Marshall islands.

Roncador or Candelaria reef, Solomon islands, was seen by the pilot Maurelle in 1781. Passing it in the night the noise of the breakers suggested the name (Snorer). It is almost certain that it was the same reef seen by Mendaña in 1567 and called by him Baxos de Candelaria. It is 18 m. in circumference and has two openings on the southwest to a good lagoon. 6° 15′ S., 159° 14′ E. **11.**

Rongelab or Bigini, of the Marshall islands, the Pescadores of ancient charts, was discovered by Wallis, September 3, 1767. A lagoon atoll 16 m. long. Gulick gives the population in 1860 at 120; Witte, in 1878, at 18. 11° 19′ N., 167° 35′ E.⊙

Rongelapelap, islet of Rongerik, Marshall islands. 11° 14′ 30″ N., 166° 59′ E.

Rongerik, Marshall islands. Discovered by Kotzebue; 36 m. long, with a width from 3–20 m. The population in 1860, according to Gulick, was 60; in 1878 Witte gives only 10. 11° 14′ N., 166° 35′ E.⊙ **6.**

Ronhua, islet in Port Uitoe on the southwest side of New Caledonia.

Ronongo, island south from Vella Lavella, Solomon islands, from which it is separated by Wilson strait. About 2000 ft. high. 8° S., 156° 32′ E.

Rook, see Umboi, Bismarck archipelago. This name was given by Dampier for Sir George Rook.

Roporopo, islet 1 m. southwest from Mngula in Orangerie bay, New Guinea. 10° 31′ S., 149° 47′ 37″ E.

Roro or Yule, on the south coast of New Guinea, is 4×1.5 m., and 534 ft. high. 8° 48′ S., 146° 32′ E. A mission station. The name is sometimes writen Lolo.

Rosario, of the Bonin islands, is 148 ft. high. 27° 18′ N., 140° 50′ E.

Rose, a coral islet discovered by Freycinet; named for his wife who accompanied him; 70 sea miles east from Manua, Samoan islands. It is inhabited only by birds. By the treaty of 1899 it belongs to the United States. 14° 31′ 30″ S., 168° 08′ 30″ W. **15.**

Rosse, northeast coast of Auckland islands, New Zealand.

Rossel, see Roua of the Louisiade archipelago. Rossel was Lieutenant on the *Recherche.*

Rota, Zarpane, Sarpan, or Luta, of the Marianas, is of calcareous rock, 12×5.5 m. and 800 ft. high. 14° 08′ N., 145° 10′ E. See map under Marianas.

Rotch, see Oneke.

Rotcher, see Tamana of the Gilbert islands.

Rotterdam, Tasman's name for Namnka of the Tongan group.

Rotuma, Rotuam or Grenville, was discovered by Captain Edwards in 1791; 8 m. E-W., 2 m. N-S.; 800 ft. high. Islets on the south are Solnahou, Solkop; on the east, Afgaha; north, Hanona; on the west, Ataou, Hofliona, Ouea. Population, 2500; all Christian. While the people are classed as Polynesian, their language belongs, according to Codrington, to the Melanesian group. 12° 28′ S., 177° E. **16.**

Roua, Rua or Rossel, of the Louisiade archipelago, is 18.5×6 m., 2750 ft. high, thickly wooded. Inhabitants, Papuan cannibals; a short, robust race, sooty brown; their language bears no resemblance to any known New Guinea dialect. East point is in 11° 23′ S., 154° 18′ E. **9.**

Round, see Alewakalou, Fiji.

Round, islet in Marau sound, Solomon islands. Another of this name off Ysabel in the same group. Still another in the Woodlark group.

Roux, five islets covered with coconuts, off the southeast coast of New Guinea. 10° 39′ S., 149° 58′ E.

Rowa is the northernmost of the Reef group, Banks islands. It has a mission station.

Royalist, a name sometimes given to the south group of Ruk, Caroline islands, comprising South and Givry.

Rua, islet of Morileu, Caroline islands.

Ruac, islet of Ruk, Caroline islands. 7° 41′ N., 151° 55′ 22″ E.

Ruadika or Solitary of the Solomon islands. 8° 45′ S., 159° 47′ E.

Ruapuke, at east entrance to Foveaux strait, New Zealand.

Ruarua, a group of several islets off the east side of Yendua, Fiji.

Rubiana, New Georgia or Marovo of the Solomon islands. 8° 22′ S., 157° 17′ E. **11.**

Ruk, Truk or Hogolen, of the Caroline islands, was discovered by Duperrey June 24, 1824. The largest group in the Carolines, composed of ten high, basaltic islands in an immense lagoon, with numerous islets (about 60) on the outer reef. Some of these islands rise to a height of 1000 ft., and are 10–15 m. in circumference. South, Givry, Hacq and Lauvergne are on a rectangular reef 12×5 m., detached from the main reef. Pis, Tsis, Tol, Woles, Salat or Chassant, Cuop, Faleü, Umol, Pones are some of the islands. Rev. F. M. Price, an American missionary stationed on Ruk, estimates the population at 15,000. The north end is in 7° 42′ 30″ N., 151° 46′ E. **4.**

Run, in Geelvink bay on the north coast of New Guinea. 2° 30′ S., 134° 35′ E.

Rua kiki, off the northeast coast of Guadalcanar, Solomon islands. 9° 30′ 05″ S., 160° 37′ E.

Rua suli, off the northeast coast of Guadalcanar, Solomon islands. 9° 30′ S., 160° 36′ E.

Rurick, see Arutua of the Paumotu archipelago.

Rurutu or Oheteroa, of the Austral group, was discovered by Cook, August 14, 1769; 1350 ft. high. Population about 600, all Protestant, under the teaching of the London Missionary Society. Annexed by France in 1889. 22° 29′ S., 151° 20′ 25″ W.

Russell or Pavuvu, a group northwest from Guadalcanar, 20 m. E-W., 12 m. N-S.; largest island is 1600 ft. high. Natives peaceable, keen traders. 9° 04′ S., 159° 05′ E.

Sabarai or Owen Stanley, of the Louisiade archipelago, is 4×0.3 m., low, thickly wooded; inhabited. 11° 08′ S., 153° 06′ E. Also spelled Sabari.

Sable, south from Goodman in the Bismarck archipelago. 3° 32′ S., 154° 36′ E.

Sabuda, on the New Guinea coast. 2° 37′ S., 131° 38′ E.

Saddle, see Lo, New Hebrides.

Saddle, in Torres strait. 10° 10′ S., 142° 40′ E.

Sagitaria (La), an island discovered by Pedro Fernandez Quirós, 12–13 February, 1606. According to Espinosa this is Tahiti.

Saibai, low, 12×4 m. on the south coast of New Guinea. Population, 100. East end is in 9° 24′ S., 142° 47′ E.

Sainson, low, wooded island on the north coast of Humboldt bay, New Guinea. 3° 09′ S., 142° 24′ E.

Saint Aignan, see Misima, Louisiade archipelago. Saint Aignan was a Lieutenant on the *Recherche*.

St. Ambrose is 4 m. in circumference, 720 ft. high (1500 ft. Maclear). 26° 19′ 45″ S., 79° 49′ 45″ W.

St. André, see Sansoral.

St. Andrew, a group of six islands near the Admiralty islands: Violet, Waikatu, Bull, Broadmead, Berry and a bushy islet. Natives seem to be a finer race than the New Irish or Solomon islanders. 2° 26′ S., 147° 24′ E.

St. Augustine, see Nanomea, Ellice group. **16.**

St. Bartholomew, see Malo, New Hebrides.

St. Bruno, an inhabited islet off the northeast point of Gardenijs, in the Bismarck archipelago.

St. Claire, see Merigi of the New Hebrides.

St. David, see Pegan.

St. Felix is 9 m. west from St. Ambrose; barren, volcanic. 26° 16′ 46″ S., 80° 00′ 15″ W.

St. George or San Jorge, see Tuilagi, Solomon islands.

St. Ignace or Hardy, islet in Ugné bay on the northeast coast of New Caledonia.

St. John, see Wouneram, Bismarck archipelago.

St. Joseph, near Gardenijs, Bismarck archipelago; about 650 ft. high; inhabited.

St. Matthias or San Matthias, of the Bismarck archipelago, was discovered by Dampier; 24 m. E-W., 15 m. N-S. 1° 40′ S., 149° 40′ E.⊙ **10.**

St. Patrick, of the Admiralty group. 2° 32′ S., 147° 15′ E.

St. Peter, see Ponafidin of the Bonin islands.

St. Phalle, island in Arembo bay on the southwest side of New Caledonia.

St. Phalle, islet on the west part of Balabio reef, New Caledonia.

St. Simeon, see Tauere, Paumotu archipelago. **21.**

Saipan or Seypan, of the Marianas, was discovered by Magalhâes March 6, 1521. Volcanic; 14 m. long, 1345 ft. high (Marche). Once populous, but now depopulated by the Spaniards who also drove out an American colony in 1815. In 1877 it was repeopled by importing 876 Chamorros and Caroline islanders. Saipan is the Serpana of Quirós, who visited it in 1596. 15° 15′ N., 145° 44′ E. See map under title Marianas.

Sakau, islet off northeast point of Espiritu Santo, New Hebrides; about 500 ft. high.

Sakau, islet southeast from Malekula, New Hebrides; 1.7 m. NE-SW.; 340 ft. high.

Sakea, islet of Fakaafo. 9° 26′ S., 171° 13′ W.

Saken, see Katiu of the Paumotu archipelago. **21.**

Salat or Chassant, islet of Ruk, Caroline islands.

Sala y Gomez was discovered in 1793 by the Spanish commander of that name. Small, rocky; inhabited only by birds. 26° 27′ 41″ S., 105° 28′ W.

Saltoi, see Arorai of the Gilbert islands.

Salwati, off the northwest coast of New Guinea. About 30 m. in diameter. Subject to the Sultan of Tidore. Papuan with admixture of Malay. Mohammedans. Wild tribes in the interior. 1° 15′ S., 130° 45′ E.

Sam, a low island of Fiji. 17° 35′ 30″ S., 177° 25′ 20″ E.⊙

Samarai or Dinner, in China strait, New Guinea; 1.5 m. in circumference, 155 ft. high. From June to December not unhealthy. No good water. 10° 37′ S., 150° 41′ E.

Samarang, a name of Palmyra.

Samba, native name of Mendaña's Santa Ysabel, Solomon islands.

Samoan Islands lie between the parallels 13° 30′–14° 30′ S. and the meridians 168°–173° W. Krusenstern believed them identical with the Bauman islands seen by Roggewein in 1721. So far as any certain knowledge of them was obtained we are indebted to Bougainville who, in 1768, touched there and called the group *Iles des Navigateurs.* The Wilkes expedition, in 1839, surveyed them with some care. The group (with the exception of Rosa or Rose island) is volcanic, but without active craters; although near Olosenga there was a submarine eruption in 1866. There are 13 islands generally surrounded by coral reefs, and there is but one good harbor in the group, that at Pangopango on Tutuila, for Apia on Upolu has only an open anchorage within the reef. The islands are, beginning at the west end, Savaii, Manono, Apolima, Upolu, Fanuatapu, Namua, Nuutele, Nuulua, belonging to Germany; and Tutuila, Anuu, Ofu, Olosenga, Tau and Rose belonging to the United States. Civil wars have prevailed of late years and England, Germany and the United States undertook to establish peace and a government by a tripartite convention (1889) which was a miserable failure, and at last the group was divided, as shown on Map 15, between Germany and the United States. Proclaimed February 16, 1900. The area of the group is about 2650 sq. m.; and the native population, which is gradually diminishing, is estimated at 30,000. From December to April hurricanes may occur. The most complete account of the geography of the Samoan islands will be found in the Journal of the Godeffroy Museum, Hamburg, 1873–5.

San Alessandro or Forfano, one of the Volcano islands. 25° 24′ N., 141° 15′ E.

San Antonio, islet off the northeast point of Gardenijs, Bismarck archipelago; well wooded; natives friendly. 3° 07′ S., 152° 43′ E.

Sanaroa, one of the names of Raputata or Welle in the D'Entrecasteaux group. **9.**

San Augustino, an islet of Oraluk, Caroline islands. 7° 37′ N., 155° 09′ E.

San Augustino, one of the Volcano islands; 623 ft. high. 24° 14′ N., 141° 25′ E.

San Bartolomeo (Bajos é Islas de), islands in 30° N. seen by Quirós.

San Bernardo (Islas de), discovered by Mendaña August 20, 1595, in 10° 40′ S. Danger islands (?). Perhaps the same that Gonzales called Isla de Pescado, February 21, 1606. Quirós Viajes, I., 53, 260; II., 6, 7, 10, 55.

San Bruno, of the Bismarck archipelago. 3° 05′ S., 152° 42′ E.

San Cristóbal, Arossi, Robatu, the Paubro of Gallego in the Solomon group, was discovered by Mendaña in June, 1568; 76×23 m., 4100 ft. high. Northwest point is in 10° 10′ S., 161° 20′ E.

Sand, the western islet of Midway atoll, Hawaiian islands; 1.5×0.7 m., 57 ft. high; little vegetation, sand glaring. 28° 12′ 22″ N., 177° 22′ 20″ W. **2.**

Sand, islet of Onoatoa, Gilbert islands. 1° 49′ S., 175° 37′ E.

Sand islet, see Dao Balayet, New Caledonia.

Sandford, high island of Fiji. 18° 50′ S., 178° 24′ E.⊙

San Dimas, Solomon islands; discovered by Pedro de Ortega Valencia, of Mendaña's expedition, in April, 1568. 9° 31′ S. Quirós Viajes, I., 4; II, 4, 28, 37.

Sands, group in Austral islands; discovered by J. R. Sands, in the whaler *Benjamin Tucker*, October 19, 1845. Examined in 1860 by Captain Lebleux, in the ship *Railleur*, who found a triangular reef, the longest side extending 3 m. NW-SE., with 3 islands, a fourth one at the apex of the triangle 2 m. NE. from central island; highest point, 66 ft. above the sea. Hull, Maria, Sands, Nororutu. Northwest corner 21° 49′ S., 154° 51′ W.

Sandwich, of the Bismarck archipelago, is 6–8 m. from the southwest coast of New Ireland; 10 m. E-W., 8 m. N-S.; 600 ft. high. North point is in 2° 53′ S., 150° 49′ E.

Sandwich, Cook's name for the Hawaiian islands.

Sandwich, see Faté, New Hebrides.

Sandy, one of the Belep islands, New Caledonia. **13.**

Sandy, on the Australian coast. 12° 35′ S., 143° 31′ E.

San Francisco, the name given by Mendaña to Wake island October 4, 1568.

San Francisco, near Gardenijs, Bismarck archipelago; about 650 ft. high; thickly peopled. 2° 50′ S., 152° 38′ E.

San Gabriel, of the Admiralty islands, is about 6 m. long; thickly peopled. 2° 06′ S., 147° 37′ E.

San German (Isla de), discovered among the Solomon islands by Pedro de Ortega Valencia of the Mendaña expedition, April 9, 1568, in 9° 30′ s.

San Jeronimo (Isla de), Solomon islands; one of the discoveries of Pedro de Ortega Valencia. Perhaps the same as San Jorge.

San Jorge (Isla de), Solomon islands, near Santa Ysabel. Natives called it Varnesta or Borue. Discovered April 23, 1568, by Ortega and Gallego of the Mendaña expedition.

San Jorge, of the Admiralty group. 2° 22′ s., 147° 18′ e.

San José, between San Francisco and San Bruno, Bismarck archipelago. 2° 59′ s., 152° 39′ e.

San Juan, see Ugi, Solomon islands.

San Juan Bautista, an unidentified discovery of Quirós, January 29, 1606, in 24° s., 139° w.

San Marcos, see Choiseul, Solomon islands.

San Marcos, discovered by Quirós April 25, 1606, is, according to Espinosa, Pau de Azucar of the Banks islands.

San Mateo (Bajos de) seen by Mendaña, September 1568, in 8° 30′ n.

San Miguel, discovered by Quirós February 9, 1606, in 19° s. The saints of the old Spanish voyagers are harder to find on the charts than saints in real life.

San Miguel, of the Admiralty group. 2° 17′ s., 147° 31′ e.

San Nicolas, another of the discoveries of Ortega and Gallego, April, 1568. "Noroeste de Santa Ysabel;" but there are many islands in that position. **11.**

San Pablo, see Hereheretui of the Paumotu archipelago. **21.**

San Pedro, see Motane of the Marquesas islands. **23.**

San Quentin, see Heraiki of the Paumotu archipelago. **21.**

San Rafael, of the Admiralty islands, is 3 m. long and very flat. 2° 06′ s., 147° 45′ e.

Sansoral or St. André, discovered by Padilla in 1710, consists of two islands, Sansoral and Kodakopuei or Fauna; low, 350 inhabitants resembling the central Carolineans. 5° 20′ n., 132° 20′ e. Also spelled Sonsol, and incorrectly Sonsoral.

Santa Ana, native Itapa, was discovered by Francisco Muñoz Rico, of the Mendaña expedition, July 4, 1568, in the Solomon group; 520 ft. high. 10° 51′ s., 162° 26′ e.

Santa Catalina, native Aguarí, of the Solomon group, was discovered by Francisco Muñoz Rico and Hernan Gallego in July, 1568. It is 2 m. e-w., and 320 ft. high. 10° 54′ s., 162° 25′ e.

Santa Christina (Cristina), see Tahuata of the Marquesas islands.

Santa Clara, a barren island 4–5 m. in diameter, southwest from Juan Fernandez. Also called Goat.

Santa Cruz Group, discovered by Mendaña in 1595; again by Carteret in 1767. Examined by D'Entrecasteaux in 1793. There are seven larger islands, Vanikoro, Tapoua, etc. British protectorate declared August 18, 1898.

Santa Cruz, Egmont or Nitendi (Ndendi) was discovered by Mendaña September 7, 1595; 15 m. long, with fringing reef. Carteret called it Egmont. Here Mendaña died October 18, 1595. 10° 40′ s., 166° 03′ e. **12.**

Sans-Souci, off Berlin harbor on the north coast of New Guinea, comprise Sainson and Faraguet; low, wooded.

Santa Isabel, Solomon islands, see Ysabel.

Santa Maria, see Gaua, New Hebrides.

Santiago, north from San Cristóbal, Solomon islands; discovered by Mendaña May, 1568.

San Urban, close to Guadalcanar; discovered by Hernando Enriquez of the Mendaña expedition. Perhaps San Juan.

Sariba or Hayter, on the New Guinea coast; 5 m. ESE-WNW., 800 ft. high. Named for Lieutenant Hayter. 10° 31′ S., 150° 45′ E.

Sariguan, of the Marianas, a volcanic cone 1.5 m. in diameter. Formerly inhabited, now deserted. 16° 42′ N., 145° 43′ E. See map under title Marianas.

Sarpan, see Rota, Marianas.

Satalo, islet on the south coast of Upolu, Samoan islands.

Satawal or Tucker, of the Caroline islands; discovered by Captain Wilson of the *Duff*, October 25, 1793; 2–3 m. in circumference; 200 inhabitants. 7° 22′ N., 147° 06′ E.

Satoan, of the Mortlock group of the Caroline islands; 7×12 m.; 60 islets and less than 1000 inhabitants. Chickens, pigs, dogs and cats are all eaten here. The south end is in 5° 17′ N., 153° 46′ E. **4.**

Saumatafanga, islet of Fakaafo. 9° 25′ S., 171° 12′ W.

Saunders, see Tapamanu, Society islands. **20.**

Sau sau, islet on the north coast of Vanua levu, Fiji. 16° 16′ 24″ S., 179° 25′ 20″ E. ⊙

Savage, see Niüe.

Savaii, of the Samoan islands, is the largest of the group; 40×20 m., 5400 ft. high; shores low. South end in 13° 48′ 40″ S., 172° 17′ 30″ W. Belongs to Germany. **15.**

Savo, a volcano north of the west end of Guadalcanar; the Sesarga of Mendaña. Discovered by Pedro de Ortega Valencia and Hernan Gallego, April, 1568. Surville called it Isla de las Contrariedades. Nearly circular; 4 m. in diameter, 1800 ft. high; At present emits steam. Inhabited. 9° 08′ S., 159° 45′ E.

Scarborough, a name given to the north group of the Gilbert islands from the ship *Scarborough*, one of those commanded by Captains Gilbert and Marshall.

Schanz, see Wotto of the Marshall islands.

Schouten, a group off the north coast of New Guinea consisting of Mysory, Korido and Biak. The last two may be one island. 1° S., 136° E.

Schouten, another group, more to the eastward, consisting of Lesson, Garnot and Blosseville.

Scilly, six islands 60 ft. high, wooded, in the Bismarck archipelago. 4° 03′ S., 151° 22′ E.

Scilly, see Fenuaura of the Society islands.

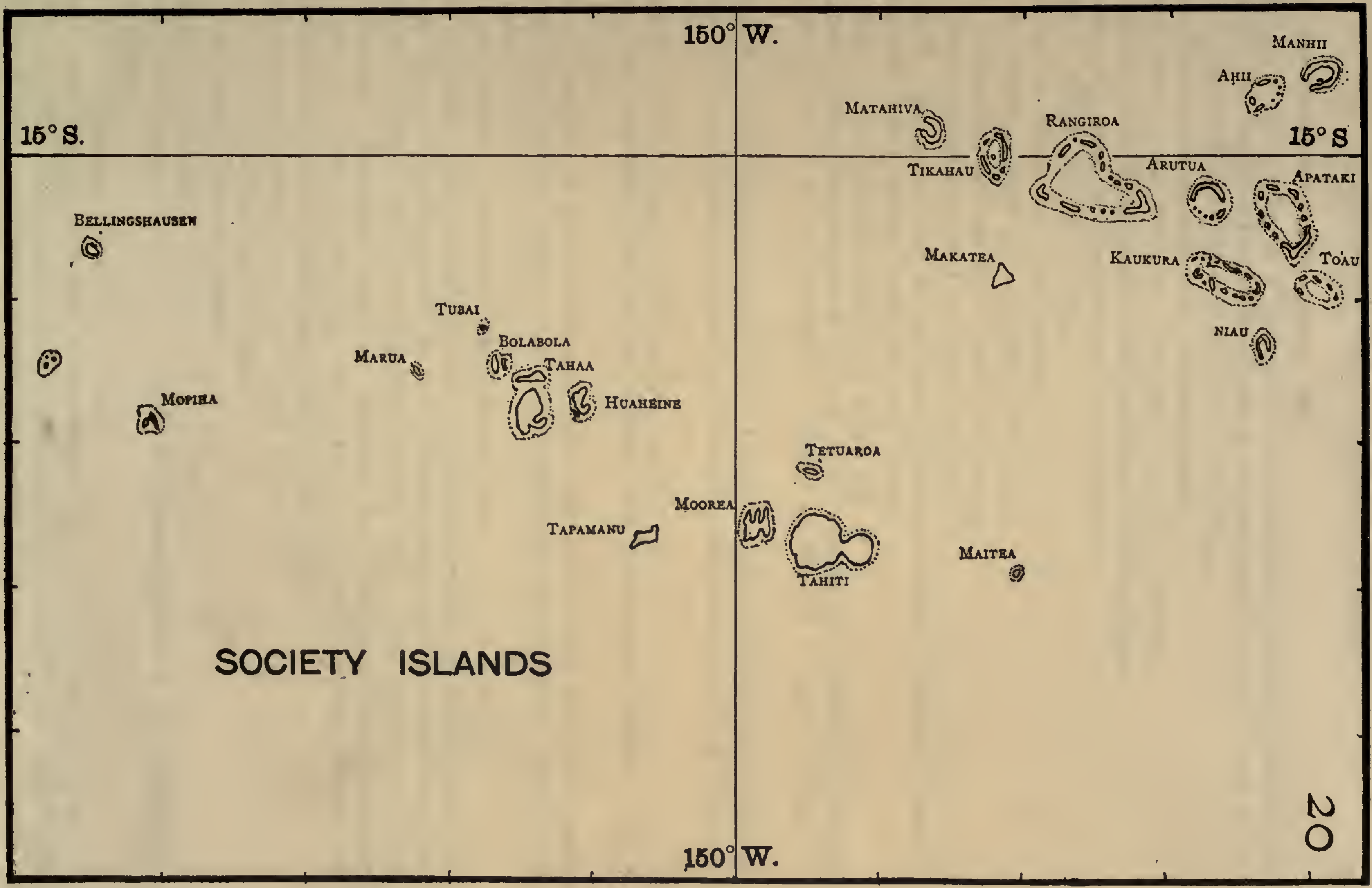
Seagull, a name of the Raeffsky islands, Paumotu archipelago.

Secretary, islet on the southwest coast of Middle island, New Zealand.

Segu, on the New Guinea coast. 5° 08′ S., 145° 50′ E.

Seniavina, Caroline islands; discovered by Lütke in 1828 and named after his vessel. Consist of Ponapé, Ant and Pakin.

Sentinel, East and West; two high islands on either side of the entrance of Taiohae bay, south side of Nukuhiva, Marquesas islands.



150° W.
15° S.
15° S
MANHII
AHII
MATAHIVA
RANGIROA
TIKAHAU
ARUTUA
APATAKI
BELLINGSHAUSEN
MAKATEA
KAUKURA
TOAU
TUBAI
BOLABOLA
MARUA
TAHAA
NIAU
MOPIHA
HUAHEINE
TETUAROA
MOOREA
TAPAMANU
MAITEA
TAHITI
SOCIETY ISLANDS
20
150° W.

Sepper, see Nuitao of the Ellice group. **16.**

Serapin, islet at entrance to Wanderer bay, on Guadalcanar, Solomon islands, where in 1851 Mr. Boyd, of the yacht *Wanderer*, was massacred. 9° 41′ S., 159° 39′ E.

Serle, see Reao or Pukaruha of the Paumotu archipelago.

Sesarga, Mendaña's name for Savo, Solomon islands.

Setovi or Selovi, a flat island 2 m. east from Aore, New Hebrides.

Seu Seu, islet near Roux group on the south coast of New Guinea.

Seven Islands, a name of Ngatik of the Caroline islands.

Sewell, in Cloudy bay, New Guinea.

Shank, see Nawodo of the Gilbert islands.

Shanz or Schanz, a name of Wotto, Marshall islands.

Sharp, in the Trobriand group. 9° 34′ S., 151° 39′ E.

Sharp, see Panantinian of the Louisiade archipelago.

Shepherd, a group near Api in the New Hebrides, consisting of Tongoa, Tongariki, Buninga, Valea, Ewose, Laika, Mai and Tevala.

Sherrard, on the Australian coast. 12° 58′ S., 143° 37′ E.

Shortland, of the Solomon islands, is 11 m. E. by N.–W. by S., 7 m. wide, 675 ft. high. 7° 03′ S., 155° 45′ E. For Shortland's Journal see Philips' Voyage to Botany bay, ch. xviii.

Shortland, on the southeast coast of New Guinea; 0.3 m. in diameter; 200 ft. high.

Siandé, islet; wooded, at entrance to Port Burai on the southwest side of New Caledonia.

Siapunor, islet of Lukunor of the Caroline islands. **4.**

Siassi, a low archipelago off the east coast of New Guinea, near Umboi. 5° 55′ S., 147° 55′ E.

Sideia or Basilisk, on the New Guinea coast, forms three sides of a hollow square open to the west; 8.2 m. E-W., 7.5 m. N-S.; inhabited; 1330 ft. high. 10° 34′ 20″ S., 150° 49′ 55″ E.

Sidney, see Sydney, a group on the New Guinea coast. 9° 35′ S., 149° 49′ E.

Sidney, or Sydney, of the Phœnix group, was discovered by Captain Emment; 2×1 m.; 20 ft. high. 4° 25′ 30″ S., 171° 21′ 40″ W.⊙ There are remains of stone buildings here.

Sikaiana or Stewart, discovered by Captain Hunter, 1791. Fine robust race of light brown color. Formerly under the Hawaiian flag; British protectorate declared August 18, 1898; 1.2 m. long, 150 ft. high. 9° S., 163° E. Faore, Manduiloto, Barena, Matu avi are uninhabited islands of this group.

Sikalai, islet of Fakaafo. 9° 22′ 25″ S., 171° 12′ W.

Silat, islet of Ruk of the Caroline islands.

Simbo, see Marovo, Solomon islands.

Simlakita, in the lagoon of Egum atoll. 9° 26′ S., 151° 57′ E. **9.**

Simonov, see Tuvana i tholo, Fiji. Named for the astronomer of Bellingshausen's expedition.

Simpson, see Apamama of the Gilbert islands.

Sinclair, small island near Naviti, Yasawa group, Fiji. 17° 12′ 30″ S., 177° 08′ 30″ E.⊙

Sindé, islet within N'Goé reef on the southeast coast of New Caledonia. Is it Siandé?

Single Tree Islet, on the north coast of Vanua levu, Fiji.

Sin Puerto (Isla), discovered by Quirós January 29, 1606, in 24° 45′ S.,=San Juan Bautista? Islands without port are not exceptional.

Sir Charles Hardy lies to the east of New Ireland; 300 ft, high; wooded.

Sir Charles Hardy, a group on the Australian coast. 11° 54′ S., 143° 28′ E.

Sir Charles Saunders, a name given by Wallis to Tapamanu of the Society islands.

Sir Edward Pellew, a group at the west side of the Gulf of Carpentaria; 5 islets, of which Vanderlin is the largest.

Sir Henry Martin, a name of Nukuhiva of the Marquesas islands. **23.**

Sisters, two small islands off the coast of Malaita, Solomon islands.

Six Islands, see Apaiang of the Gilbert islands.

Skelton, a name of Naranarawai of the Louisiade archipelago.

Skiddy, see Namoluk, Caroline islands.

Skobelev, islet in Friedrich Karl harbor on the north coast of New Guinea.

Slade, see Berri Berrije in the Engineer group off New Guinea. 10° 37′ S., 151° 16′ E.

Sloss group, in the Louisiade archipelago, consists of Rara and Panaroba, both small and wooded.

Small, an islet east from Duau, D'Entrecasteaux group. 10° 06′ S., 151° 15′ E.

Smith, low islet of the Underwood group, Fiji. 17° 43′ S., 177° 16′ 20″ E.⊙

Smith = Babagarai near Glenton, New Guinea; uninhabited.

Smyth, see Taongi of the Marshall islands.

Snares, a group of rocks 250 ft high, southwest from Stewart island, New Zealand.

Sobareigi, north from Saibai, New Guinea. 9° 22′ S., 142° 42′ E.

Sobasoba, islet of Duau, D'Entrecasteaux group. 9° 49′ S., 150° 48′ E.

Society Islands, so named by Cook, in 1769, in honor of the Royal Society, were first discovered by Quirós in 1606. Captain Wallis rediscovered the group June 19, 1767, and knowing nothing of previous observations called it for his patron, George III., King George Islands. At that time Lieutenant Furneaux took formal possession. April 2, 1768, Bougainville arrived at Tahiti in the *Boudeuse*, and after a short experience with the inhabitants called it La Nouvelle Cytrehè. The famous transit of Venus expedition, commanded by Lieutenant Cook, arrived April 12, 1769. After the observations were concluded Cook surveyed Tahiti (Otaheité) and discovered the northwestern group to which he gave the name Society, calling Tahiti and the neighboring islands Georgian, but his first name has been extended to the whole group. In 1772 Bonecheo was sent by the Spanish government to these islands, and on his report he was again sent with the means of colonizing as then understood, in 1774. Cook twice again visited Tahiti. The next European to arrive was Lieutenant Bligh in the *Bounty* in 1788. Vancouver came in 1791. In 1842, on account of hostilities to French missionaries, Du Petit Thouars compelled Queen Pomare to sign a treaty in favor of Frenchmen, and this was followed in 1844 by the forcible seizure of the island by Bruat in the name of Louis Philippe of France. In 1888 the entire group was declared under a French protectorate.

While government accounts are kept in francs and centimes, the merchants all do business with the Chilean dollar. The principal exports are cotton, copra, coconuts, oranges, vanilla, lime juice and edible fungus. All tropical fruits grow well when introduced. The climate is hot and moist, causing rapid growth of all vegetation, but is healthy for Europeans. The islands are, from the southeast, Maitea, Tahiti, Tetuaroa, Moorea and Tapamann for the windward group; and Huaheine, Raiatea, Tahaa, Bolabola, Tubai, Marua, Mopiha and Bellingshausen for the leeward group. **20.**

Socorro (Nuestra Señora del), see Taumaco.

Sogaura, an island north of Saipai on the New Guinea coast. 9° 19′ S., 142° 44′ E.

Sola, see Pylstaart.

Solander is west of Foveaux strait; mountainous, 1075 ft. high. 46° 32′ S. Named for Dr. Solander, one of Cook's naturalists.

Solia, islet of Kia, Fiji.

Solitaria (La), discovered by Mendaña August 29, 1595. Native name Tayti. 10° 40′ S.

Solitary, in Huon gulf on the east coast of New Guinea. 7° 10′ S., 147° 00′ E.

Solitary, see Ruadika of the Solomon islands.

Solomon Islands. A large group discovered by Mendaña in 1567. This interesting Spaniard, in his auxiety to colonize and make his discoveries of use to his country, strove for many years to induce the authorities to send another expedition; but it was not until 1595, when he was advanced in years, that his wishes bore fruit. He was not destined to again see the islands which had been named *Islas de Salomon* in hopes to attract colonists to this supposed Ophir. Mendaña died at Santa Cruz, and the remains of his expedition sailed on to Manila. The narrative of Gallego, the pilot of the first expedition, had been suppressed, and that of Quirós, who held the same position in the second expedition, met the same fate. Drake had made his name terrible in the Pacific, and the jealousy of the Spaniards led to a studied concealment of their discoveries, and for two centuries the memory of this group was fading and passing into legend. So it was that the Spanish discoveries profited no one; and even when at last the suppressed journals were brought to light they afforded little new information, for the work of discovery had been done again in the meantime. In 1767 Carteret sighted outlying islands of the group (Gower), and also a part of Malaita, but he did not suspect that he had found the Solomon islands, although he had been looking for them. The next year Bougainville made more definite work, but the real discovery took many years, and to the present no sufficient survey has been made. Only the shores of the larger islands have been explored, and the outlines are very inexact on the charts.

For more than thirty years the Melanesian Mission has braved the dangers of climate and savages and made it possible to land on many islands of the group. Dr. Guppy says truly that the only redeeming feature of the intercourse of the white man with these islanders is this grand mission.

The group covers an area 600 m. in length NE-SW. Most of the islands are volcanic, some are calcareous, and some are both. The natives are Papuan, but show traces of Melanesian, Polynesian and Malay. They are of medium height, well-proportioned, but do not have attractive features. The scantiest clothing is worn, but ornaments are much in use, such as bracelets, anklets and nose pins. Cannibals generally, they yet make good servants.

The principal islands are, beginning at the northwest, Bouka, Bougainville, Shortland, Fauro, Choiseul, Ysabel, St. George, Gower in the German part; and Mono, Vella Lavella, Ronongo, Narovo, New Georgia (Rubiana), Buena Vista, Florida, Guadalcanar, Malaita, Ulava, San Cristóval in the English portion. As the map (**12**) does not give the line of demarcation between the portions allotted to Great Britain and to Germany, the official bounds may be given here. Southward and eastward of a line joining the undermentioned positions these islands belong to the former, northward and westward to Germany.

A.	Lat. 8° 00′ S.	Long. 154° 00′ E.	E.	Lat. 8° 50′ S.	Long. 159° 50′ E.
B.	“ 7° 15′ S.	“ 155° 25′ E.	F.	“ 6° 00′ S.	“ 173° 30′ E.
C.	“ 7° 15′ S.	“ 155° 35′ E.	G.	“ 15° 00′ S.	“ 173° 30′ E.
D.	“ 7° 26′ S.	“ 156° 40′ E.			

Since the above was written the Solomon islands have been repartitioned between England and Germany as a part of the arrangement by which the former withdrew from the Samoan group. The convention was signed at London on the 14th November, 1899, but proclaimed by the High Commissioner for the Western Pacific at Suva, 6th October, 1900. It transfers from Germany to the Protectorate of the British Solomon islands the following:—

Choiseul, and the small islands depending thereon; Ysabel, and the small islands depending thereon, including Ramos and St. George; Shortland, with Morgusaia, Alu, Poporang, Faise, Onua and Ballale; Fauro, with Oema (island and atoll), Ovau, Asie, Illina, Nusave, Niellei, Nusakoa, Benana, Nufahana, Munia, Piedu, Masamasa and Cyprian Bridge; Tasman or Niumanu atoll, comprising Niumanu, Loto and thirty-seven others; Ontong Java; El Roncador or Candelaria reef; Gower or Inattendue.

Songo, a low coral islet at the entrance to Na Tandola harbor on the west coast of Viti levu, Fiji.

Soni, a high island of the Hudson group, Fiji. 17° 44′ S., 177° 07′ 40″ E.⊙

Sonsol = Sansoral of the Pelew islands. Not Sonsoral. Sonsol with Fauna forms the group of St. André. 5° 20′ N., 132° 20′ E.

Sophia, Mattinson, Independence or Rocky, of the Ellice group; 2–3 m. in circumference; wooded. 10° 46′ S., 179° 31′ E. **16.**

Sorol or Philip, of the Caroline islands, was discovered by Captain Hunter in 1791, who called it Philip. Consists of two small groups 5 m. apart; 20 inhabitants. 8° 06′ N., 140° 03′ E.

Sotoan, see Satoan, Caroline islands.

South, islet Caroline atoll. 10° 00′ 01″ S., 150° 14′ 30″ W.

South, islet of Ruk, Caroline islands. 6° 57′ N., 151° 57′ 30″ E.

Sovu, three uninhabited rocks off the northeast coast of Vanua Mbalavu, Fiji. The most westerly has a peak 230 ft. high.

Sowek, a small group on south coast of Korido, Schouten islands. 0° 45′ S., 135° 25′ E.

Spear, a group on the northeast coast of New Guinea. 8° 58′ 30″ S., 149° 10′ E.

Speiden, see Tavarua, Fiji. A name given by Wilkes for the purser of the *Peacock*.

Speiden, see Nuitao of the Ellice group. Spelled also Spieden in Ex. Ex.

Spencer Keys, see Ngoli, Caroline islands.

Spike, low and wooded, 1 m. in diameter, near North Foreland, New Guinea.

Spires, two small coral patches near Utian of the Louisiade archipelago.

Squally, of Tasman, is the Kerué of Bougainville; about 2 m. in diameter, low and wooded. 1° 40′ S., 150° 30′ E. **10.**

Staaten Land, Tasman's name for New Zealand.

Stacey, see Su-a-u, New Guinea. 10° 43′ 30″ S., 150° 14′ E.

Stalio, on the southeast coast of Bougainville, Solomon islands. 6° 25′ S., 155° 56′ E.

Stanton, see Babaman of the Louisiade archipelago.

Star or Star Peak, see Merlav, New Hebrides.

Starbuck, or Volunteer, was discovered by Captain Starbuck of *L'Aigle*, whaler, in which the Hawaiian king, Liholiho, and suite went to England. Sighted by Lord Byron when he returned the bodies of the King and Queen. Taken by the British in December, 1866; 5 m. E-W., 1.5 m. N-S., 15 ft. high; a guano island. 5° 38′ S., 155° 55′ W.

Starbuck, see Aranuka of the Gilbert islands.

Staver, see Vostok.

Steeple, see Jemo, Marshall islands. Properly Steep to.

Stephen, see Ugar, Torres strait.

Stewart, New Leinster or South Island (Rakiura), of New Zealand, was discovered by Cook in 1770. In 1809 it was explored and surveyed by Captain J. Chase in the *Pegasus;* named for W. Stewart, First Officer; then uninhabited. Population, in 1886, 200; mostly Maoris or half-breeds; 39 m. N-S., 20 m. E-W., 3200 ft. high, wooded. On the west coast are islets Long, Mogy and Codfish. Other islets are Bench, Weka, Breaksea, Entrance, Pearl, Anchorage, Noble, Wedge, Ernest and Raggedy.

Stewart, see Sikaiana. Discovered by Captain Hunter in 1791.

Stirling, south from Mono, Solomon islands, is a raised coral reef 200 ft. high; 3×0.5 m. 7° 25′ S., 155° 31′ E.

Stobual, islet of Aurh of the Marshall islands. 8° 18′ 42″ N., 171° 12′ E. **6.**

Storm, a high island of Fiji. 18° 20′ 20″ S., 178° 10′ 15″ E.⊙

Strachan, a large interfluvial island on the south coast of New Guinea, between the Wassi Kussa and Mai Kussa rivers.

Stradbroke, 33×6 m. off Moreton bay, Queensland. North point is in 27° 23′ S., 153° 15′ E.

Straggling, northeast of the east point of Deaf Adder bay, New Guinea; 2.2 m. off shore. 7° 27′ S., 147° 27′ E.

Strait (E.), in Torres strait. 10° 29′ S., 142° 26′ E.

Strawn, islet of Palmyra.

Strong, see Kusaie, of the Caroline islands.

Stuart, near Mbenga, Fiji; high, 1.5 m. in circumference. 18° 24′ 20″ S., 178° 05′ 25″ E.⊙

Stuers consists of Marai and Taliwewai in the Louisiade archipelago. 11° 07′ S., 151° 08′ E.

Su-a-u or Stacey was formerly supposed the south end of New Guinea; extends 2 m. NE-SW.; 787 ft. high. 10° 43′ S., 150° 14′ E.

Suckling Reef, see Uluma of the Louisiade archipelago.

Sudest, see Tagula of the Louisiade archipelago.

Sue, of the Three Sisters in Torres strait; 15 m. from Warrior. 10° 13′ S., 142° 49′ E.

Sugar-loaf, 13 m. south from Admiralty island; 4–5 m. in circumference; 800 ft. high. 2° 22′ 30″ S., 146° 49′ 15″ E.

Sugar-loaf, see Obelisk of the Marquesas islands.

Sugar-loaf, see Mota of the Banks islands.

Suhm, of the Admiralty group; half a mile long; uninhabited. 1° 50′ S., 146° 33′ E. Named for Rudolph von Willemoes Suhm, naturalist on the *Challenger*.

Suk or Pulo Suk, of the Caroline archipelago, was discovered by Ibargoitia in 1799. Population, 100 Polynesian. 6° 28′ N., 149° 30′ E.

Suk, see Supiori of the Schouten islands.

Sule, islet on the east coast of Ysabel, Solomon islands. 8° 05′ S., 159° 32′ E.

Sulphur, one of the Volcano islands. 24° 50′ N., 141° 18′ E.

Sunday, islet north from Moratau, of the D'Entrecasteaux group. 9° 16′ S., 150° 30′ E.

Sunday, see Peru of the Gilbert islands.

Sunday, see Raoul, Kermadec islands.

Supiori or Suk, of the Schouten islands in Geelvink bay on north coast of New Guinea.

Surprise, one of the Huon group, 2 m. E-W., 1 m. N-S. 18° 31′ S., 163° 08′ E. **13.**

Susui, of the Exploring islands, Fiji, is between Munia and Vanua valavo; cultivated. 17° 21′ S., 181° 03′ E.⊙

Suvárov, a group discovered by Lieutenant Lazarev in the *Suvárov* in 1814. A reef 8 m. N-S., and nearly as broad, has several wooded islets mostly in the northern part. British protectorate declared April 22, 1889. 13° 13′ S., 163° 09′ 15″ W.

Suvárov, see Taka of the Marshall islands. **6.**

Suwarro, a low, wooded islet off Malekula, New Hebrides.

Suwan, mangrove islet off Malekula, New Hebrides.

Swain, see Gente Hermosa.

Swallow, see Matema. **12.**

Swallow, see Canton, Phœnix group.

Swede, see Lamotrek, Caroline islands.

Sweers, a long, narrow island east from Bentinck, Wellesley islands, in the Gulf of Carpentaria. 17° 05′ S., 139° 54′ E.

Sydenham, see Nonuti, Gilbert islands. **7.**

Sydney, Phœnix islands, was discovered by Captain Emment. It is a coral reef with closed lagoon, 2×1.7 m. British protectorate declared June 26, 1889. West side is in 4° 27′ 22″ S., 171° 15′ 09″ W. **17.**

Sydney, a group in Ward Hunt strait, New Guinea. 9° 35′ S., 149° 49′ E.

Ta, islet of Pakin, Caroline islands. **5.**

Taabame, islet on a reef of the same name on the northeast coast of New Caledonia.

Taanlai and Taanlo, islets near Paâbâ on the northwest coast of New Caledonia.

Taaruto, on the northeast coast of Guadalcanar, Solomon islands. 9° 35′ S., 160° 37′ E.

Tabal, islet of Aurh of the Marshall islands. **6.**

Tabanagore = Tabunagora.

Table, see Kâmac, New Caledonia.

Table, see Motumau, New Zealand.

Tabua, high islet off Viti levu, Fiji. West side is in 17° 30′ S., 177° 30′ 10″ E.

Tabunagora, an islet of the outer ring of Egum atoll at the northeast part, on the south side of the opening to the lagoon. 9° 21′ 30″ S., 153° 02′ E.

Taburari, islet of Oneatoa, Gilbert islands. 1° 54′ 45″ S., 175° 47′ 10″ E.

Tabutha or Cap, inhabited island of Fiji, 3×1.7 m., 350 ft. high. 17° 40′ S., 181° 12′ E.⊙

Taenga or Holt, discovered in the *Margaret* in 1803 and named Holt; low, inhabited. Northwest point is in 16° 18′ S., 143° 17′ W. Paumotu archipelago. **21.**

Tafahi or Boscawen, of the Tongan islands, was discovered by Lemaire and Schouten May 11, 1616, and by them named Cocos. Wallis, in 1767, named it Boscawen; 2000 ft. high; inhabited. 15° 52′ S., 173° 50′ W.

Tafolaelo, islet of Fakaafo. 9° 24′ 50″ S., 171° 12′ W.

Tagaik, islet of Pakin, Caroline islands. 7° 04′ 04″ N., 157° 47′ E.

Tagula or Sudest is the largest of the Louisiade archipelago, being 40×8 m., and 2689 ft. high; wooded and inhabited. Northwest point is in 11° 20′ S., 153° 11′ E.

Tahaa is within the same reef with Raiatea, Society islands; 1936 ft. high. Many islets on the reef. 16° 35′ S., 151° 35′ 06″ W. **20.**

Tahanea or Tchitschagof, of the Paumotu archipelago, a reef covered with wooded islets. Three good entrances to the lagoon. The west end is in 16° 52′ S., 144° 58′ W. **21.**

Tahanlagh, islet off the north end of Balabio, New Caledonia. **13.**

Tahiti or Otaheité, of the Society islands, the Sagittaria of Quirós who discovered it February 10, 1606. Wallis rediscovered it in 1767. 17° 38′ 30″ S., 149° 30′ W.⊙ 33 m. NW-SE.; divided into two parts by an isthmus about 1.2 m. wide, the smaller called Taiarapu. Orohena, the highest peak, is 7329 ft. Barrier reef surrounds the island at a distance of 1–2 m., within which are several good harbors, the principal being Papieté on the northwest. Here is the seat of Government. Point Venus, the place of Cook's observations, is on the north side. **20.**

Tahuata or Santa Cristina, of the Marquesas islands, was discovered by Mendaña 21–22 July, 1595; 8.5 m. N-S., 1.2–5 m. E-W.; 3280 ft. high. Population, in 1888, was 408. 9° 56′ 21″ S., 139° 06′ W. **23.**

Tahura, old chart name for Kaula of the Hawaiian islands. **1.**

Tahurowa = Kahoolawe, Hawaiian islands.

Taiahu, islet on the east reef of Huaheine.

Taiaro or King, of the Paumotu archipelago, was discovered by Captain Fitzroy of H. M. S. *Beagle* in 1835. The lagoon is closed; islets wooded; few inhabitants. 15° 46′ S., 144° 37′ W. **21.**

Taifaur, a grassy islet, 270 ft. high, northwest from Abaga gaheia in the Louisiade archipelago.

Taii, islet of Tongatabu on the northeast. 21° 01′ S., 174° 57′ W. **18.**

Taitaka, islet in the centre of Port Stanley, Malekula, New Hebrides; 400×200 yds.

Taka or Suvárov, atoll with closed lagoon and a few islets on the east reef. Population, 20 in 1860. Discovered in 1814 by Lieutenant Lazarev in the *Suvárov.* Protectorate declared by Great Britain April 22, 1889. 13° 15′ S., 163° 10′ W.

Takain, islet of Ponapé, Caroline islands. **5.**

Takapoto (Oura of Cook), in the King George group, of the Paumotus. It is low, wooded, with closed lagoon and many islets. North point is in 14° 32′ 08″ S., 145° 14′ 30″ W. **21.**

Takaroa (Tiokea of Cook), low, wooded atoll, open lagoon; with the preceding forms King George group. The north point is in 14° 22′ 10″ S., 144° 58′ 30″ W. **21.**

Taka, islet of Pingelap, Caroline islands. **5.**

Taki, a low island of Fiji. 17° 07′ 06″ S., 176° 52′ 50″ E.⊙

Takoumé = Takurea of the Paumotu archipelago. **21.**

Takurea, Wolkonski or Takoumé, is an inhabited atoll with closed lagoon. Northeast end is in 15° 39′ 30″ S., 142° 06′ 15″ W. **21.**

Takutea or Fenua iti, of the Hervey islands, is 3 m. in circumference, uninhabited, well wooded. 19° 49′ S., 158° 16′ W. **23.**

Talbot, a small group on the south coast of New Guinea between 142° 08′–142° 22′ E. longitude and 9° 15′–9° 21′ S. latitude. Consists of Kawa, Mata kawa, Adabadana kawa, Karobailo kawa, Kussa and Boigu. **8.**

Taliwewai, a low coral island of the Stuers group, Louisiade archipelago. **9.**

Taloes, islet of Ruk, south side of east entrance to the lagoon.

Tamami, see Tinakula of the New Hebrides. **12.**

Taman (Tomun or Tanman), islet of Ponapé, Caroline islands.

Tamana or Rotcher, of the Gilbert islands, is 3×0.7 m. Population, 500. 2° 32′ S., 175° 55′ E.

Tamatam or Los Martires, of the Caroline islands, consists of a reef 11 m. N-S., 6 m. E-W., with four islands: on the north, Ollap; in the centre, Fanadik; and at the south, two called Tamatam. About 200 inhabitants. East end is in 7° 27′ 30″ N., 149° 28′ E.

Tamborua, islet 99 ft. high at the entrance to Wailea bay on the north coast of Vanua levu, Fiji. **14.**

Tami, native name of the Crétin islands on the New Guinea coast. Four low, well wooded and inhabited islands. 6° 45′ S., 147° 54′ E.

Tanabuli, on the southeast of Ysabel, Solomon islands. 8° 27′ S., 159° 43′ E.

Tandé, 1070 ft. high. 20° 05′ S., 163° 46′ E.

Tandruku, islet 35 ft. high off the northeast coast of Viti levu, Fiji.

Tangadio, islet on the northwest coast of New Caledonia.

Tangoa = Tanoa = Tongoa, New Hebrides.

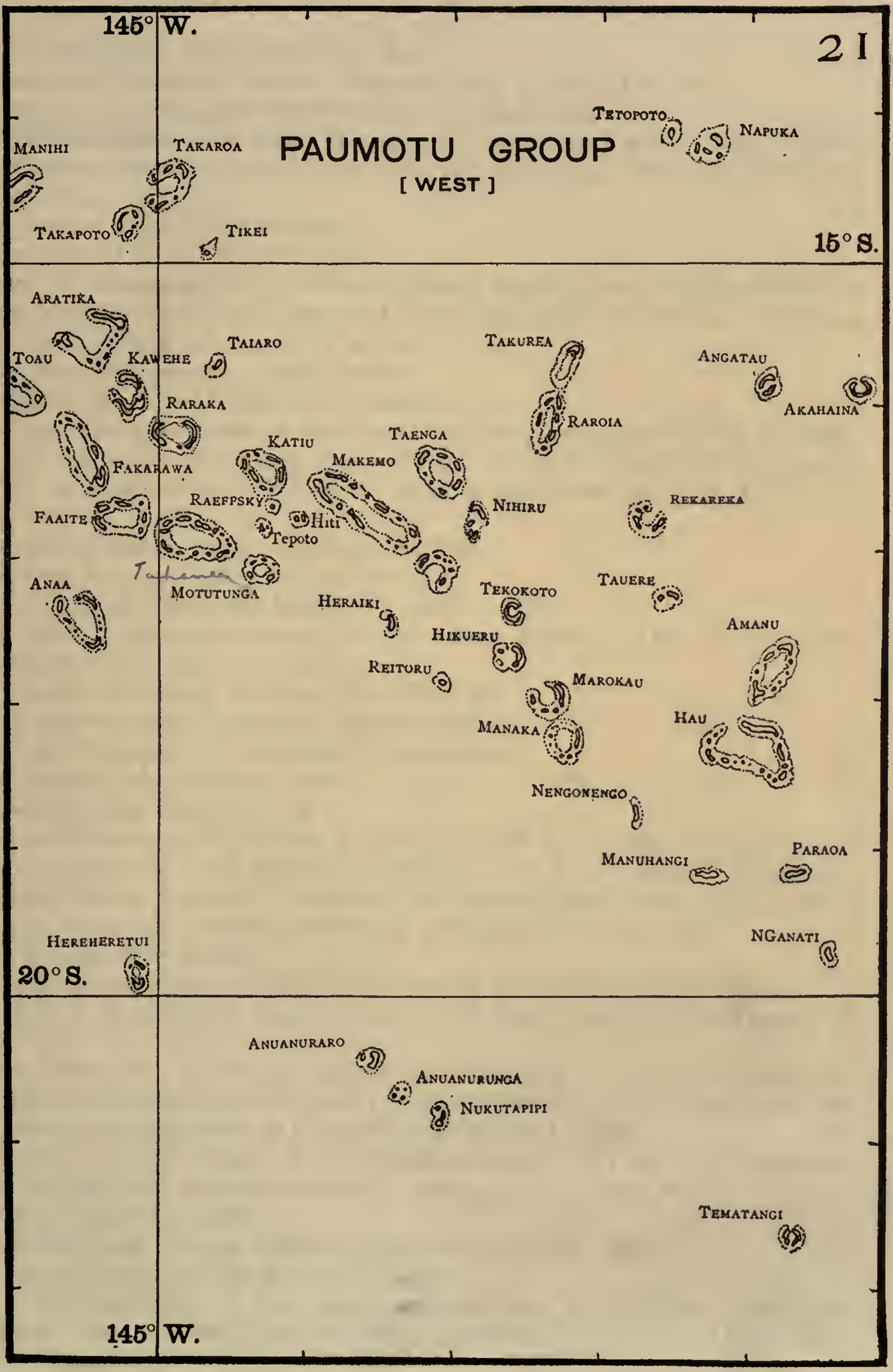
Tanlé, islet at the mouth of Tanlé bay on the northwest coast of New Caledonia.

Tanna or Aipere, of the New Hebrides, was discovered by Cook in 1774. An active volcano, Mt. Yasua, has been in continuous eruption since the time of Cook. In 1878 there was a severe earthquake which altered the region about Port Resolution. In the centre mountains rise to about 3000 ft. Some 8000 natives, formerly cannibals. 19° 31′ 17″ S., 169° 20′ E. The size is given in one place at 30×10 m. In another, of equal authority, 18×10 m. And still another says 40×35 m. The reader may choose. Tanna = Honua = land. **12.**

Tannawa, islet of Viti levu, Fiji. 17° 47′ 16″ S., 178° 39′ 10″ E.⊙

Tanyah, islet of Oneatoa of the Gilbert islands. 1° 47′ S., 175° 34′ E. **7.**

Taongi, Gaspar Rico or Smyth, a low atoll with closed lagoon. 14° 45′ N., 169° 15′ E.


145° W.
2 I
PAUMOTU GROUP
[WEST]
Tetopoto
Napuka
Manihi
Takaroa
Takapoto
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15° S.
Aratika
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Akahaina
Raraka
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Katiu
Taenga
Makemo
Fakarawa
Faaite
Raeffsky
Hiti
Tepoto
Nihiru
Rekareka
Tahanea
Motutunga
Anaa
Heraiki
Tekokoto
Tauere
Hikueru
Amanu
Reitoru
Marokau
Manaka
Hau
Nengonengo
Manuhangi
Paraoa
Hereheretui
Nganati
20° S.
Anuanuraro
Anuanurunga
Nukutapipi
Tematangi
145° W.

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Taoru, islet of Raiatea, Society islands. **20.**

Taoui, one of the Admiralty islands. West end in 2° S., 146° 32′ E. **10.**

Tapak, islet on the northeast side of Ponapé, Caroline islands.

Tapamanu or Saunders, also called Maiaiti and Tubuai manu, of the Society islands, was discovered by Captain Wallis July 28, 1767; 6 m. long. Northeast point is in 17° 38′ 41″ S., 150° 33′ W.

Tapelau, islet of Yap, Caroline islands.

Tapimoor, islet of Mille, Marshall islands.

Tapiteuea or Drummond, of the Gilbert islands, was discovered by Captain Bishop of the *Nautilus.* It is 30 m. long and 0.5–0.7 m. wide. Population, 7000–8000. North point is in 1° 08′ S., 174° 37′ 30″ E.

Tapitu, a form of Tapiteuea, Gilbert islands.

Tapu, island in Auckland harbor, New Zealand.

Tapua, Utupua or Edgecumbe, in the Santa Cruz group, was discovered by Mendaña in 1595. Carteret named it Edgecumbe in 1764. The west summit is in 11° 17′ 30″ S., 166° 32′ 14″ E., according to D'Urville. British protectorate declared August 18, 1898. **12.**

Tapui, a conical islet in Ahurei bay, island of Rapa.

Tarakoi, islet of Rapa. 27° 35′ S., 144° 18′ W.

Taravai or Belcher, islet of the Mangareva group.

Tarawa, Cook or Knoy (not Knox), of the Gilbert islands; 18 m. N-S., 13 m. E-W. North end is in 1° 39′ 05″ N., 173° 02′ E. **7.**

Tareti, a sandy island near Noumea, New Caledonia.

Taritari, a common form of Butaritari, Gilbert islands.

Tariwerwi, see Ouessant, of the Louisiade archipelago.

Tarrang, islet of Yap, Caroline islands.

Tasiko, see Api, New Hebrides. **12.**

Tasman, atoll discovered by Tasman in 1700, and seen by Captain Welling in 1824. Some 40 islands on a reef encircling a lagoon; 11 m. E-W., 7 m. N-S. Inhabitants resemble Gilbert islanders. Niumano, the largest island, is on the east side in 4° 35′ S., 159° 30′ E. British protectorate proclaimed October 6, 1900.

Tassai or Brumer, New Guinea.

Tastu, an inhabited island in Humboldt bay on the north coast of New Guinea.

Tatafa, islet 3 m. southwest from Lefuka in the Hapai group of the Tongan islands. **18.**

Tatakoto, called also Narcissus, Egmont and Clerke, of the Paumotu archipelago, was discovered by Bonecheo in 1774; 4×1 m.; inhabited. 17° 18′ S., 138° 19′ W. **22.**

Tatana, islet in Port Moresby on the south coast of New Guinea.

Tau, the largest of the Manua group, Samoan islands, is 14 m. in circumference, 2500 ft. high; well watered and fertile. Belongs to the United States.

Tau, islet of Tongatabu. **18.**

Taua, islet east from Tangoa, Espiritu Santo, New Hebrides. **12.**

Tauak, lagoon islet of Ponapé, Caroline islands.

Tauan or Mt. Cornwallis, is 9 m. in circumference and 795 ft. high. Inhabitants Negrito. Station of the London Missionary Society. 9° 25′ 30″ S., 142° 32′ E.

Tauata or Santa Cristina, of the Marquesas islands; 9 m. N-S., 5 m. E-W., 3280 ft. high. Population, 450 in 1880. South point is in 10° 02′ S., 139° 09′ W. **23.**

Tauere or Taueri, also St. Simeon, Resolution and Tandrec, of the Paumotu archipelago, was discovered by Bonechco in 1772. Named by Cook in 1773 after his ship; 4 m. in circumference; two islands. West point is in 17° 22′ 21″ S., 141° 29′ 39″ W. **21.**

Taulalia, islet in the Ringgold group, Fiji.

Taumaco, discovered by Quirós, April 7, 1606, and named Nuestra Señora del Socorro, is, according to Espinosa, the Duff group. **12.**

Tauna, islet of Rapa. 27° 36′ S., 144° 17′ W.

Tautu, islet on the northwest of the outer reef of Tahaa, Society islands.

Tauturau, islet of Rapa. 27° 37′ S., 144° 16′ W.

Tavarua or Speiden island, off the west coast of Viti levu, Fiji. 17° 52′ S., 177° 10′ 30″ E. Named Speiden by Wilkes after the Purser of the *Peacock.*

Tavea, high island in Naloa bay, Vanua levu, Fiji. Inhabitants make good pottery. 16° 38′ 24″ S., 178° 43′ 30″ W.⊙

Taviuni or Vuna, Fiji; 23×8 m.; Ngalau peak, 4040 ft. high. Population, 2600 in 1880. East point is in 16° 48′ 30″ S., 180° 14′ E.

Tavua, inhabited islet of Mamanutha i thaki group, Fiji.

Tavuka or Rara ni Tinka, islet 150 ft. high, 2.2 m. south from Yanutha, Fiji.

Tavunasithi, Fiji; coral islet, half a mile in diameter, 200 ft. high; uninhabited.

Tchitschagoff or Tchitchagov, see Tahanea, Paumotu archipelago.

Teapi, see Rapanui.

Teauaua or Hat, islet in Shavay bay on the southeast side of Huahuna, Marquesas.

Tebut, see Lib of the Marshall islands.

Tegua, a circular island in the middle of Torres group, about 3.5 m. in diameter, nearly 600 ft. high; 2.5 m. southeast from Hiw or North island.

Te Houra, see Waikawa, New Zealand.

Teilau, uninhabited islet 500×150 yds., on the southeast coast of Viti levu, Fiji.

Tekareka, see Tekokoto, Paumotu archipelago.

Tekokoto, Tekareka or Doubtful, of the Paumotu archipelago, was discovered by Cook, August 11, 1773. It is a circular reef a mile in diameter. 17° 20′ S., 142° 37′ W.⊙ **21.**

Teku, see Anuanurunga of the Paumotu archipelago.

Teku, see Vanavana of the Paumotu archipelago. **22.**

Tematangi or Bligh lagoon, of the Paumotu archipelago, was discovered by Bligh in 1792. It is 7 m. in diameter. Some of the inhabitants were removed to Tahiti in 1858 on suspicion of having eaten a shipwrecked crew. North point is in 21° 38′ S., 140° 40′ W. **21.**

Temelflua, near Taumaco, the same as Tukopia.

Temo, see Jemo of the Marshall islands.

Temotu or Trevanion, Santa Cruz group, at the entrance of Trevanion lagoon, the Puerto graciosa of Mendaña who named this island La Guerta. Carteret called it Trevanion. It is 10 m. in circuit. British protectorate declared October 1, 1898. The north point is in 10° 40′ S., 165° 41′ 30″ E. **12.**

Tenararo or Bedford island, in the Actæon group of the Paumotu archipelago, is 2 m. in diameter, with a closed lagoon. About 20 inhabitants. 21° 18′ s., 136° 42′ w.

Tenarunga or Minto, of the Actæon group in the Paumotu archipelago, is 7 m. northwest from Maturei vavao. 21° 22′ s., 136° 34′ w. **22.**

Te Ndu encloses Port Laguerre on the west. On the southwest side of New Caledonia; 1 m. n-s.

Tenia, islet on the north side of St. Vincent passage, on the southwest side of New Caledonia.

Tepoto or Ofiti (the Eliza of Mauruc) was discovered by Bellingshausen in 1820. Of the Raeffsky group in the Paumotu archipelago. 16° 48′ s., 144° 19′ w. **21.**

Terio, islet of Apaiang, Gilbert islands. 1° 48′ 30″ n., 173° 01′ e.

Tern, on the Australian coast. 11° s., 142° 46′ e.

Testard, two islets on the southwest side of New Caledonia.

Teste, see Wari on the New Guinea coast.

Tetaro, islet on the northeast part of the outer reef of Raiatea, Society islands.

Tetiaroa, a chart form of Tetuaroa, Society islands. **20.**

Tetuaroa, of the Society islands, was discovered by Quirós, February, 1606. A reef with a dozen islets, wooded. East end is in 17° 07′ 15″ s., 149° 29′ 30″ w.

Tetopoto (Disappointment islands of Byron), of the Paumotu archipelago, covers about 9 sq. m.; no lagoon; uninhabited(?); large trees. 14° 08′ s., 141° 16′ w. **21.**

Teuaua, islet of Uapu in Shavay bay, Marquesas islands.

Teumah, islet at the northwest extremity of Onoatoa, Gilbert islands. 1° 53′ s., 175° 30′ e.

Tevai, within the reef of Vanikoro; 9 m. in circumference; high.

Tevairoa, islet of Bolabola, Society islands.

Tevala, one of the Shepherd islands, New Hebrides; small and almost inaccessible; 324 ft. high at the west end.

Thakaundrove, islet in Uaikava harbor on the south coast of Vanua levu, Fiji.

Thakavi, islet on the north coast of Vanua levu, Fiji.

Thangalai, south from Moturiki on the southeast coast of Viti levu, Fiji. 17° 47′ 46″ s., 178° 46′ 40″ e.

Thikombia (Cicobia), one of the Exploring islands, Fiji; 5 m. northeast from Munia; 3 m. se-nw.; 1.7 m. wide; north end is in 15° 47′ 40″ s., 180° 09′ e. **14.**

Thithia (Cicia), a fertile, inhabited island 4×3 m., 300 ft. high. Northwest point is in 17° 44′ 30″ s., 180° 42′ e. **14.**

Thombia, the highest of the Ringgold group, is the crater of an extinct volcano, in the centre of which is a lake 24 fathoms deep; whole island not quite 2 m. in circumference; 590 ft. high.

Thompson, Fiji. 18° 30′ 45″ s., 177° 36′ 45″ e.⊙

Thornton, see Caroline.

Three Hills, of the New Hebrides, is 6 m. ne-sw., and 2.5 m. wide. Mae is the central district and is pure Polynesian, while the languages on the other side are Melanesian. The three hills are, from the east, 1850, 1450 and 1400 ft. high. 17° 05′ s., 168° 19′ e. **12.**

Three Kings, group northwest from Cape Marie van Diemen, New Zealand.

Three Sisters, rounded islets near east point of Bultig, New Guinea. 10° 13′ S., 142° 19′ E.

Three Sisters, Las Tres Marias or Olumalau of the Solomon islands. About 10° S., 162° E.; 230–250 ft. high. The south island is named Malaupina, the north one Alita.

Thrum Cap, see Akiaki of the Paumotu archipelago.

Thukini, islet on the north coast of Vanua levn, Fiji.

Thumbu, islet 100 ft. high at the mouth of Rakiraki river, north coast of Viti levu, Fiji.

Thursday, see Waiben. Centre of Pearl and Trepang fisheries.

Ti-a, islet at the north end of New Caledonia.

Tiaé, islet at the entrance to Tanlé bay on the northwest coast of New Caledonia.

Tiano, islet on west coast of Raiatea, Society islands.

Tidiaut, two islets off Cape Baye on the northeast coast of New Caledonia.

Tienghiene, islet at the mouth of Nehue bay on the northwest coast of New Caledonia.

Tiere, wooded islet of Tahiti, opposite Tomotai valley.

Tiga, Tika or Boucher, of the Loyalty group, 8–10 m. in circumference, 150 ft. high, with fringing reef. Used as a dump for the worst natives. 21° 29′ 20″ S., 168° 17′ E.

Tiger, an island "inhabited by ferocious savages," discovered by Captain Bristow in 1817; 6.7 m. E-W. 1° 45′ S., 142° 18′ E. Probably identical with Matty, which see. **8.**

Tikahau or Krusenstern, of the Paumotu archipelago, was discovered by Kotzebue in 1815. A small, wooded island 10 m. in diameter, with a lagoon and inhabitants. The north point is in 14° 52′ S., 148° 15′ 15″ W. **20.**

Tikei or Romanzoff, of the Paumotu archipelago, was discovered April 20, 1815, by Otto von Kotzebue and named for Prince Romanzoff. 14° 57′ S., 144° 35′ 30″ W.⊙ **21.**

Timboor, of the Yasawa group, Fiji; high. 16° 40′ S., 177° 30′ 30″ E.⊙

Timoe or Crescent, of the Paumotu archipelago, was discovered by Captain Wilson in the *Duff*, in 1797; uninhabited. Northeast point is in 23° 17′ S., 134° 34′ 10″ W. **22.**

Tinakula or Tamani is a permanently active volcano 2200 ft. high, in the Santa Cruz group. British protectorate declared August 18, 1898. 10° 23′ 30″ S., 165° 47′ 30″ E.

Tindal, see Ailnk of the Marshall islands. **6.**

Tingolanu, a low island off Marovo, Solomon islands; 3–4 m. N-S. 8° 43′ S., 158° 15′ E.

Tinian, of the Marianas, was discovered by Magalhâes, March 6, 1521. He called it Bona Vista; 10 m. N-S., 4.5 m. E-W.; 234 inhabitants in 1887. 14° 59′ 22″ N., 145° 33′ E. Low, but volcanic. See map under Marianas.

Tiokea, see Takaroa of the Paumotu archipelago. **21.**

Tioae, islets in bay of the same name near Noumea, New Caledonia.

Tioki, islet of Fakaako. 9° 24′ 20″ S., 171° 12′ W.

Tipamau, islet at the entrance to Fairoa bay, Raiatea, Society islands.

Tiri, a group of low, mangrove-covered islands off Vanua levu, Fiji. Consists of Williams, Green, Mills, Piner, Pully, Richmond and Day.

Tiritiri, in Auckland harbor, New Zealand.

Tissot, see Baibesika, 3 m. east from South cape, of New Guinea.

Tisungatu, islet of Fakaafo. 9° 24′ 35″ S., 171° 12′ W.

Tjan, islet of Maloclab, Marshall islands. 8° 52′ 39″ N., 171° 01′ 31″ E.

Tnaguinui, islet of Nui, on the east side; inhabited. Ellice islands.

Toahotu, islet off Tahaa, Society islands. **20.**

Toamaro, islet off west side of Raiatea, Society islands.

Toass, islet of Elato, Caroline islands. 7° 24′ 30″ N., 146° 19′ E.

Toau or Elisabeth, of the Paumotu archipelago, lagoon atoll with many islets; 20 m. E-W. All the fish in the lagoon are said to be poisonous. The southeast point is in 15° 58′ S., 145° 49′ 30″ W. **21.** 20

Tobi, Lord North or Neville, was discovered on the ship *Lord North* in 1781; 1.5 m. long, well wooded, inhabited. 3° 03′ N., 131° 04′ E.

Tobin, in Torres strait. 10° 06′ 30″ S., 142° 21′ E. Tobin Cay is in 9° 37′ S., 143° 40′ E.

Tœmo, islet in Port Goro at the south end of New Caledonia.

Tofua (*whale* in Tongan), a volcano 5 m. in diameter, 2800 ft. high. 19° 45′ S., 175° 03′ W.

Tog or South (called Pukapuka by the traders) is an inhabited island of the Torres group, 9 m. in circumference, and 600 ft. high.

Tokelau, see Fakaafo.

Tokelau or Union group consists of Atafu with 63 islets, Nukunau with 93 islets, and Fakaafo with 62. **17.**

Tokikimoa, islet of Fakaafo. 9° 24′ 32″ S., 171° 12′ W.

Tokoeoa, islet on the north of Mille, Marshall islands, at the west side of the entrance to the lagoon.

Tokoriki, uninhabited islet of Mamanutha i thaki group, Fiji.

Tokowa, islet on the west side of the entrance to Port Rhin, Mille, Marshall islands.

Toku, a low island, 11 m. ESE. from Amargura or Fonualei, Tongan islands. 18° 08′ S., 174° 08′ W. **18.**

Tokuna, Toguna or Alcester, 3 islets within one reef in the Trobriand group. 9° 29′ S., 152° 30′ 45″ E. The name seems to belong rather to the people than to the islands.

Tol, islet of Ruk, Caroline islands; 10 m. in circumference, 700 ft. high; largest of the Faitruk group in the western part of the lagoon. 7° 21′ 08″ N., 151° 39′ 22″ E.

Tombarua, low island of Fiji. 17° 59′ 46″ S., 178° 45′ 10″ E.⊙

Tomman or Uru, off the southwest coast of Malekula, New Hebrides; 1 m. NW-SE., 260 ft. high.

Tonga (Toga) or Friendly Islands, a group of 150 islands and islets occupied by some 22,000 inhabitants. It is essentially a volcanic group, although many of the islands are low. The group was discovered by Tasman in 1643. Tongatabu he called Amsterdam, Eua Middleburgh, and Namuka Rotterdam. Cook was there both on his second and third voyages, and gave the name Friendly. The Spaniard Maurelle discovered Vavau in 1781. The government is a limited monarchy, the seat of government at Nukualofa on Tongatabu. Now England controls the group.* The Wesleyan mission was established in 1826, and the inhabitants are all Christian. The group has not been fully surveyed. **18.**

Tongaravu, islet 70 ft. high off the east coast of Viti levu, Fiji.

Tongareva or Penrhyn was discovered by Sever in the ship *Lady Penrhyn*. An atoll 12×7 m., and 50 ft. high; the lagoon is 9 m. across and contains 15 islets. In 1863 it was almost depopulated by Peruvian slavers. March 22, 1888, it was annexed to Great Britain. Tongareva means Tonga in the heavens. 9° 06′ 25″ S., 158° 02′ 10″ W.

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*A British protectorate over the entire group was proclaimed May 19, 1900.

Tongariki, volcanic island in the New Hebrides. 17° S., 168° 36′ E. **12.**

Tongatabu or New Amsterdam was discovered by Tasman January 29, 1643; 27 m. E-W., 10 m. N-S., 60 ft. high. Composed entirely of coral rock. In places there are caves with fine stalactites. See Mariner's account. 21° 07′ S., 175° 11′ E.

Tongoa, New Hebrides, the Shepherd islands of Cook, are off the south coast of Espiritu Santo. A Presbyterian mission here. 15° 36′ 12″ S., 167 °E.

Topati, islet on the east reef of Huaheine, Society islands.

Torea, islet on west coast of Raiatea, Society islands.

Torlesse or Bonabonanga, low, wooded, uninhabited islets 8.5 m. southwest from Panniet in the Louisiade archipelago, on a reef 4 m. long. 10° 48′ S., 152° 13′ E. **9.**

Torres (Ababa, Baba or Vava), a group of the Banks islands consisting of Hiw, Metoma, Tegua, Lo, and Tog. They have little water and the natives depend on coconuts for drink. The north island is 1200 ft. high, the others much lower. Melanesian mission has a station here.

Torres, islet of Ruk, Caroline islands. 7° 20′ N., 151° 24′ E.

Tortoise, an islet of the Pleiades group, Loyalty islands. **13.**

Torua, islet of Maloelab, Marshall islands. 8° 43′ 10″ N., 171° 09′ 35″ E.

Totoya, Fiji; 5 m. E-W., 3.5 m. N-S. Notch peak is 1200 ft. high in 18° 56′ 30″ S., 180° 05′ 30″ E.

Totten, a high island of the Yasawa group, Fiji. 17° 29′ 30″ S., 177° 01′ 15″ E.⊙ Named for George M. Totten of the Wilkes expedition.

Touching, see Butaritari, Gilbert islands.

Toukoua, an islet of Ontong Java. With the rest of the group belongs to Great Britain.

Toulon, see Malin kolo, New Guinea.

Toveru, islet on the west side of Burn bay on the northeast coast of New Caledonia.

Tovu and **Tovu lailai** are both on the same reef on the north coast of Viti levu, Fiji. The former is 250 ft. high.

Tower, of the Galapagos, is 211 ft. high. 0° 20′ N.

Tracey, low, uninhabited island of the Admiralty group.

Tracy, see Vaitapu, Ellice islands. **16.**

Traitor, a group of small and low islands north of Jobi in Geelvink bay, New Guinea. 1° 15′ S., 136° 31′ E.

Traitors or Padeaids on the north coast of New Guinea.

Travers, in Torres strait. 10° 23′ S., 142° 20′ E.

Traversey, see Aurh, Marshall islands.

Treasurers, second in size of the Duff group.

Treasury, see Mono, Solomon islands. **11.**

Tree, 4×2 m. low and wooded, off Fly river, New Guinea. 8° 41′ S., 143° 37′ E.

Tree, islet of Arova, Louisiade archipelago.

Tree, islet of Florida, Solomon islands.

Tregnada (La), of the Solomon islands, was discovered by Mendaña in May, 1568. Native name Braba or Vraba. Now Ulaua.

Tres Marias, see Olu malau, Solomon islands.

Trevanion, see Temotu of the Santa Cruz islands.

Trevennen, see Huapu of the Marquesas islands.

Trio, islets on east side of Hugon island on the southwest coast of New Caledonia.

Trobriand, see Kiriwina group.

Troilem, islet of Uluthi, Caroline islands. **3.**

Trois Sœurs, of Surville = Tres Marias of Mendaña = Olu malou.

Tromelin, see Feys of the Caroline islands. **3.**

Truk, a form of Ruk, Caroline islands.

Tsis, islet of Ruk, Caroline islands; 0.7 m. in diameter. 7° 18′ 30″ N., 151° 48′ 30″ E.

Tua, see Quoin, New Guinea.

Tuamaco, a name given by Quirós to Disappointment island in the Duff or Wilson group.

Tuamotu, the French form of Paumotu; *tua* a bunch, and *motu* island.

Tuanae, islet on northeast reef of Maupiti, Society islands.

Tuanaki or Reid, atoll in the Raeffsky group, in the north, uninhabited. 16° 41′ S., 144° 14′ W.

Tuatua, see Haszard islands, Louisiade archipelago.

Tu-aye, islet in Banaré bay on the northwest coast of New Caledonia.

Tubai or Motuiti, uninhabited, lagoon island, Society islands. 16° 15′ S., 151° 48′ W. **20.**

Tubanaielli, west of Kambara, Fiji; uninhabited; 150 ft. high; with fringing reef. 18° 42′ 30″ S., 180° 56′ E.⊙

Tubuai, of the Austral islands, has an encircling reef about a mile from shore. Population in 1881 was 343. 23° 21′ 45″ S., 149° 35′ 35″ W.

Tubuai manu, see Tapamanu, Society islands.

Tubuai, a name often given to the Austral islands from the principal island.

Tubutubu or Engineer, in the New Guinea region.

Tuck, one of the Magellan islands; existence doubtful.

Tucker, see Satawal, Caroline islands. **3.**

Tucopia is 7 m. in circumference, and 3000 ft. high; inhabited by mild and inoffensive Polynesians. British protectorate declared August 18, 1898. 12° 21′ S., 168° 43′ E.

Tuesday islands are in Torres strait. 10° 32′ S., 142° 21′ E.

Tufa, islet of Rongelab of the Marshall islands. 11° 14′ 35″ N., 166° 47′ 40″ E. **6.**

Tufaaga or Tufaka, islet on the northwest coast of Tongatabu. 21° 04′ S., 175° 15′ W. **18.**

Tugua, in the Tongan group. **18.**

Tugulu, the northern islet of Pingelap, Caroline islands. 6° 14′ N., 160° 52′ E. **5.**

Tuhoua or Mayor, in the Bay of Plenty, New Zealand.

Tuilagi or St. George, uninhabited island southwest from Ysabel, Solomon islands. 13 m. long. 8° 30′ S., 159° 30′ E. **11.**

Tuinaka or Reid, of the Paumotu archipelago. Northwest point is in 16° 37′ 17″ S., 144° 13′ W.

Tuki, a mile in diameter, off Viti levu, Fiji. 17° 19′ 40″ S., 178° 02′ E.⊙

Tukopia, see Tucopia; Temelflua of Quirós.

Tukua, islet of Ontong Java. 5° 34′ S., 159° 15′ E.

Tuma, in the Kiriwina group. 8° 29′ S., 150° 52′ E.

Tumbu, on the New Guinea coast. 4° 25′ S., 133° 35′ E.

Tuna, islet of Tiri group, 100 ft. high, on the north coast of Vanua levu, Fiji.

Tupete, on the south coast of New Caledonia.

Tupinier, in Dampier strait, Bismarck archipelago. Active volcano, in eruption in 1877. 5° 25′ s., 148° 08′ E.

Tupua or Marion, islet in Teavanui harbor, Borabora, Society islands. **20.**

Turea, on the south coast of New Guinea.

Tureia, Carysfort or Papakena, was discovered by Captain Edwards in H. M. S. *Pandora* in 1791. Lagoon closed. East end is in 20° 45′ s., 138° 30′ w.

Turn-again, on the south coast of New Guinea. 9° 34′ s., 142° 16′ E.

Turtle, see Vatoa, Fiji.

Turtle, islet in Malo pass, Espiritu Santo, New Hebrides.

Turtle, islet in Port Powell, of New Britain.

Turtle-backed, off the New Guinea coast. 9° 54′ s., 142° 46′ E.

Tut or Warrior, an inhabited sandbank with an extensive reef. 9° 48′ s., 142° 55′ E.

Tutuila, of the Samoan islands, is 17×5 m., high, volcanic. Mataafo peak is 2359 ft. high. It has the fine harbor of Pangopango on the south coast, nearly bisecting the island. In Asu bay Comte de Langle, M. de Lamanon and a boat crew of La Pérouse's fleet were massacred in 1787. The west cape is in 14° 20′ 40″ s., 170° 48′ 14″ w. This with the Samoan islands to the eastward now belongs to the United States. **15.**

Tuvana i tholo or Simonov, and Tuvana ira or Michaelov, of Fiji, are each about half a mile in diameter. The surrounding reefs are circular, and the islets are nearer the north side. Named for the astronomer and artist of Bellingshausen, 1820. 21° 03′ s., 178° 50′ 10″ w.

Tuvuna, islet east from Tongoa, New Hebrides.

Tuvutha (Tuvuca), Fiji; a densely wooded and inhabited island, 800 ft. high, in 17° 40′ s., 178° 49′ w. Palolo are caught off the eastern point.

Tuyam, islet 0.3 m. long, 160 ft. high, on the southeast coast of New Guinea.

Two Brothers, see Kepara, New Guinea.

Two Groups, see Manaka, of the Paumotu archipelago.

Two Hills, see Mataso, New Hebrides. 17° 18′ s., 168° 23′ E.

Ua Huka, see Huahuna of the Marquesas islands. **23.**

Ualan, a name of Kusaie or Strong island of the Caroline archipelago. **5.**

Ualeva, of the Tongan islands.

Ualomo, islet of Ugo bay, Isle of Pines.

Uanne, islet in Gazelle passage on the northwest coast of New Caledonia. **13.**

Uap, see Yap of the western Caroline islands.

Uapora, see Huapu of the Marquesas islands.

Uapu, see Huapu of the Marquesas islands.

Uatom or Man, in the Bismarck archipelago, is in 4° 07′ s., 152° 03′ E. On the coast of New Britain.

Udia-Milai, see Bikini of the Marshall islands.

Udjae or Katherine, of the Marshall islands, is 22×6 m. Udjae or Ujae the southern islet, and Enylamiej the northern one, are considered the finest and most fertile of the group. The north point of Enylamiej is in 9° 21′ N., 165° 36′ E. **6.**

Udjelong, of the Caroline group, also called Arecifos and Providence islands. There are thirteen islets occupying a space 24 m. long by 7–8 m. wide. 9° 52′ N., 160° 56′ E. **5.**

Uea, Uvea or Halgan of the Loyalty group. This name sometimes extends to three adjoining islands formed by a narrow, interrupted strip of raised coral reef 23 m. SSW-NNE., with a mean breadth of 1.5 m., but at the north end this increases to 7–8 m. 20 m. from Lifu. Two races inhabit the island; the northern one is said to have come from Uvea or Wallis island. Fertile, but good water scarce. **13.**

Uemie, islet within NGoë reef on southeast coast of New Caledonia.

Uen or Waima, off southwest point of New Caledonia. High and rugged; 4.5 m. N-S. Named by Cook "Prince of Wales Foreland".

Ugai is the northwest islet of Mokil, Caroline group. 6° 39′ N., 159° 40′ E.

Ugar or Stephen, in Torres strait, is a mile long, fertile and inhabited. 9° 30′ S., 143° 32′ E.

Ugi or San Juan, of the Solomon group, is 6 m. long; 670 ft. high. 10° 15′ S., 161° 43′ E. **11.**

Ugo, a small islet, lies 2.7 m. S. by E. from Cape Ndua, New Caledonia.

Uia, an islet of the Hapai group, Tongan islands.

Uika, another form of Uia, Tongan islands.

Ulakua, see Ulava, Solomon islands.

Ularua, small desolate island of Fiji; Olenea of Wilkes. 18° 33′ 30″ S., 181° 14′ E. North end.

Ulava or Contrariété, of the Solomon group, is 27 m. northeast from Ugi; 8 m. N-S. by 3 m.; 1200 ft. high. Natives noted for making canoes for the neighborhood. 9° 47′ S., 161° 56′ E. This is La Treguada of Gallego. **11.**

Ulie, see Wolea, Caroline islands.

Ulietea, see Raiatea.

Ulikar is the eastern islet of Majuro, Marshall group.

Ulilaba, an islet east from Tongoa, New Hebrides; 0.7 m. NE-SW.; 120 ft. high.

Uliti, a spelling of Uluthi, Caroline islands.

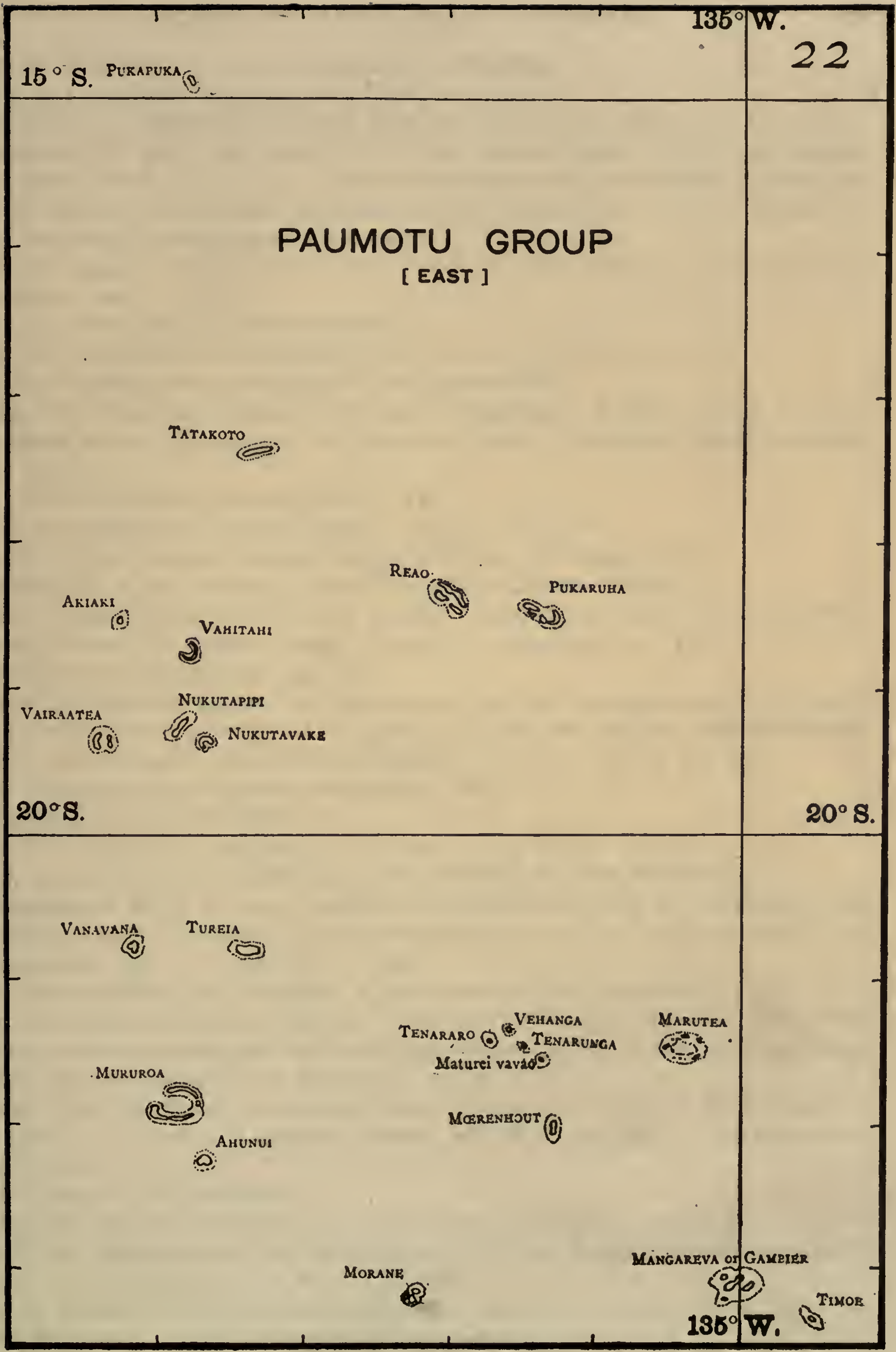
Ulu, an uninhabited islet of Duke of York islands, Bismarck archipelago. 4° 13′ S., 152° 25′ E.

Ulu, see NGoli, Caroline islands.

Ulul, islet of Namonuito, Caroline islands. 8° 36′ N., 149° 47′ 30″ E.

Ululina, of the Louisiade archipelago, lies west from Moturina; 325 ft. high; few inhabitants.

(Please insert this opposite page 160 of the INDEX TO THE ISLANDS OF THE PACIFIC OCEAN. A page of the manuscript was inadvertently omitted in printing.)


22
135° W.
15° S.
Pukapuka
PAUMOTU GROUP
[EAST]
Tatakoto
Reao
Pukaruha
Akiaki
Vahitahi
Nukutapipi
Vairaatea
Nukutavake
20° S.
20° S.
Vanavana
Tureia
Vehanga
Marutea
Tenararo
Tenarunga
Maturei vavao
Mururoa
Mœrenhout
Ahunui
Mangareva or Gampier
Morane
Timoe
135° W.

Uluma, or Suckling reef, is in the Louisiade archipelago.

Ulunau, in the Admiralty group, is in 2° 06′ S., 147° 32′ E.

Uluthi, Uluti or Mackenzie, of the Caroline islands, was discovered by Captain Mackenzie in 1823, but previously by the Spaniard Egoi. The islets Mogmog (on which Padre Cantova was killed when endeavoring to establish a Jesuit mission), Falalep, Troilem, Ear and Kilap are the principal ones. 9°56′N., 139°50′E. **3.**

Umaitia was Bougainville's name for Tetuaroa.

Umboi or Rook is immediately west of New Britain; 28×16 m., 5000 ft. high, volcanic. **10.**

Umol, islet of Ruk in the Caroline islands.

Umuda, at the mouth of the Fly river, New Guinea. 8° 28′ S., 143° 48′ E.

Unalik, see Ounalik, islet of Namonuito, Caroline islands.

Undaga, one of the French islands, Bismarck archipelago. 4° 38′ S., 149° 12′ E. **10.**

Underwood group, Fiji, consists of Bateman, Henry, Linthicum, Ogle, Reynolds, and Smith.

Undui, islet of the Ono i lau group, Fiji. **14.**

Unei, on the north coast of New Guinea. 3° 10′ S., 143° 21′ E.

Unes, islet of Uea, Loyalty group; covered with many flat-topped hills.

Uneyeute, islet at the southeast end of Namonuito, Caroline islands.

Union or Tokelau, group of low coral islands extending 180 m. NW-SE.: Gente Hermosa, Fakaofu, Nukunono, Atáfu. Belongs to Great Britain. **17.**

Uo, see Lainé of the Loyalty group. **13.**

Upolu, of the Samoan islands, is the second in size and contains the principal port, Apia, of the German portion of the group; 39.5 m. E-W., with an average width of 8 m.; 3200 ft. high. Subject to hurricanes. 13° 46′ S., 171° 20′ W. **15.**

Ura, see Takapoto of the Paumotu archipelago. **21.**

Urak, see Mokil, Caroline islands.

Urara, of the Bismarck archipelago; 1 m. E-W. 4° 17′ S., 151° 39′ E.

Uraura, islet in the harbor on the south side of Pallikulo, New Hebrides.

Ureparapara or Bligh is 12 m. northwest from the north point of Vanua lava, New Hebrides; nearly circular; 12 m. in circumference, 2440 ft. high; volcanic; 300 inhabitants. 13° 35′ S., 167° 18′ E. **12.**

Uri, islet of Malekula, New Hebrides; 1.5 m. WNW-ESE.; low, inhabited.

Uripiv, islet of Malekula, New Hebrides, half a mile in diameter; 300–400 inhabitants. Natives are said to bury their old or sick people alive. Presbyterian mission station.

Urombo, islet of Malekula, New Hebrides. 15° 58′ S.

Urracas, of the Marianas, consists of three islands in a circle 2–3 m. in diameter; probably the remains of a sunken crater. 20° 08′ N., 145° 19′ E. See map under Marianas.

Uru, see Tomman, New Hebrides.

Urukiki, islet off Port Stanley, of Malekula, New Hebrides.

Uruktapi or Urukthopel, of the Pelew islands, is 5.5 m. long; uninhabited. South point is in 7° 14′ 30″ N., 130° 28′ E.

Uruma or Duchess, of D'Entrecasteaux group, is west from Duau. 9° 57′ S., 150° 51′ E.

Useless, two small, wooded islands on the New Guinea coast. 10° 35′ 45″ S., 150° 51′ E.

Utan, islet in Meoko harbor, Duke of York island, Bismarck archipelago.

Uteroa, the northern islet of Tapiteuea, Gilbert islands. North end is in 1° 08′ 20″ S., 174° 45′ E.; south end 1° 29′ 14″ S., 175° 11′ 02″ E. **7.**

Utet, islet in Faitruk group, Ruk lagoon, Caroline islands.

Utian or Brooker, in the Louisiade archipelago. 11° 03′ S., 152° 27′ E. **9.**

Utirik, Button or Kutusow, Marshall islands, is 20×5 m. 11° 20′ N., 169° 50′ E.⊙

Utupua, an old form of Tapoua or Edgecumbe of the Santa Cruz group.

Uvea or Wallis was discovered by Maurelle in 1781, and again by Wallis in 1797. There are nine separate islands from 1–10 m. in circuit, and many islets or rocks enclosed within one reef, though there is a ship passage to the lagoon on the south. Uvea is 7 m. N-S., volcanic, 197 ft. high. Reef 14 m. N-S., 9 m. E-W. Came under French influence in 1842; at first attached to the jurisdiction of Tahiti; November 27, 1887, it was, with Futuna, made part of New Caledonia. Population in 1880, 5000 and increasing. On the south are Faüa, Nukuatea, Nukuafo, Nukufetao, Faioa, Akimoa or Sail-rock; on the east, Nukulufala, Lonaniva, Fougalei; on the north, Takuaviki, Nukuteatea, Nukuloa, and Nukufutu. The southwest point of Uvea is in 13° 23′ 35″ S., 176° 11′ 47″ W. **18.**

Uvea, a form of Uea, Loyalty group.

Uyelang, islet of Udjelong, Marshall islands. Northeast end in 9° 43′ N., 161° 19′ E.

Vaga, of the Kiriwina group. 8° 44′ S., 150° 55′ 30″ E.

Vahanga or Bedford, in the Actæon group; 5 m. west from Tenarunga, Paumotu archipelago. **22.**

Vahine, a form of Huaheine, Society islands.

Vahitahi or Cook's lagoon was discovered by Bougainville in 1768, and seen by Cook the next year; 3×1 m. Paumotu archipelago. 18° 42′ S., 138° 50′ W. **22.**

Vaiorea, islet on the west side of Huaheine, Society islands.

Vairaatea, Vairaotea or Egmont, of the Paumotu archipelago, was discovered by Wallis in 1767; consists of two islets, Pukararo (leeward), Tres Cocotiers of Maurnc, and Pukarunga (windward) or Egmont. 19° 20′ S., 139° 18′ W. **22.**

Vairaatea, see Mururoa, Paumotu archipelago. Often confounded with the preceding.

Vaitupu or Tracy, of the Ellice group, is of oval shape with fringing reef; 4 m. in diameter. Formerly spelled Oaitupu. 7° 30′ S., 178° 41′ E. **16.**

Vakuta, inhabited islet of the Kiriwina group. 8° 47′ S., 151° 04′ E.

Valea, one of the Shepherd islands, New Hebrides; uninhabited, narrow, almost inaccessible; 367 ft. high. Above the steep sides are coconut groves. **12.**

Valise, see Guilbert, New Guinea.

Valua, of the New Hebrides, extends 6 m. NE-SW.; 1400 ft. high. Fertile, with a population of about 1000. A station of the Melanesian mission. 13° 40′ S., 167° 38′ E.

Vambi, one of the French islands, Bismarck archipelago. 4° 40′ S., 149° 11′ E.

Vanama, south from Tagula, Louisiade archipelago. 11° 38′ S., 153° 31′ E.

Vanavana, Kurateke, Barrow or Teku, of the Paumotu archipelago, was discovered by Beechey January 31, 1826. It is a narrow strip of sand surrounding a lagoon; 1.2×1.7 m. 20° 45′ S., 139° 03′ W.⊙ **22.**

Vanderford, of the Underwood group, Fiji. 17° 38′ S., 177° 21′ 30″ E.⊙

Vanderlin, the largest of the Sir Edward Pelew group in the Gulf of Carpentaria. Named for one of the directors of the Dutch East India Company who was a great promotor of marine discoveries.

Vangunu, a name of the island off the southeast end of New Georgia or Rubiana, Solomon islands.

Vanikoro, of the Santa Cruz islands, is 30 m. in circumference and 3000 ft. high Densely wooded and only the coast inhabited. Tevai is on the same reef. As the scene of the loss of the two ships of La Pérouse, in 1788, Vanikoro has a sad interest. British protectorate declared August 18, 1898. 11° 41′ 50″ S., 166° 51′ E. **12.**

Vanua kula, an islet of Kandavu, Fiji, 250 ft. high. 18° 48′ S., 178° 25′ 10″ E.

Vanua lava or lavu, New Hebrides, the largest of the Banks group, 15 m. N-S., 10 m. E-W.; 3000± ft. high, active volcano on the ridge. 13° 48′ S., 167° 30′ 30″ E. **12.**

Vanua levu, Fiji; 100×25 m., 3200 ft. high, is the second in size of the Vitian group and mountainous and wooded, with many bays and harbors with entrances through openings in the barrier reef. The northeast point is in 16° 06′ 30″ S., 180° 07′ E. **14.**

Vanua masi, coral islet, 80 ft. high, within the Argo reef, Fiji. 18° 05′ S., 178° 27′ W.

Vanua mbalavu, Fiji, is 14×1 m.; Mt. Koro mbasanga is 930 ft. high. 17° 13′ S., 178° 58′ W.

Vanua vatu, Fiji, is 6 m. in circumference and 310 ft. high. Frequented by fishermen. 18° 22′ S., 180° 39′ E.⊙

Vao, islet of New Caledonia. 20° 35′ S.

Vao, islet of Malekula, New Hebrides, off Port Stanley.

Varivari, two islets on the south coast of New Guinea.

Vaté, see Faté, New Hebrides.

Vatganai, islet in Banks group, New Hebrides. 13° 12′ S., 167° 40′ E.

Vatia, islet on the north coast of Viti levu, Fiji, 600 ft. high. 17° 20′ S., 177° 50′ E.

Vatia, small, high and rocky island off the north coast of Tutuila, Samoan islands. **15.**

Vatilau or Buena Vista, off the northwest coast of Florida, Solomon islands; 1950 ft. high. 8° 53′ 30″ S., 159° 59′ 30″ E. **11.**

Vatiu, see Atiu, Hervey islands. **23.**

Vatoa or Turtle was the only one of the Fijian group seen by Cook in 1774. Coral, 2×0.5 m., 209 ft. high. Population less than 100. 19° 47′ S., 171° 43′ 42″ E. **14.**

Vatu i thake, off Vanua levu, Fiji. North point is in 16° 33′ 24″ S., 178° 44′ 30″ E.

Vatu, a high island in the Yasawa group, Fiji. 17° 16′ S., 177° 07′ E.⊙

Vatu ira, islet 100 ft. high, off the northeast coast of Viti levu, Fiji; in the north part of the Vatu ira lagoon, which is 14×3 m. 17° 19′ S., 178° 27′ E.

Vatuka, one of the Tiri group, off the west coast of Vanua levu, Fiji.

Vatu lailai, islet at the mouth of the weather passage to Vatu leile, Fiji.

Vatu leile, Fiji, a well wooded, inhabited island, 6.7×1.7 m. and 110 ft. high. 18° 34′ 30″ S., 177° 36′ 30″ E.

Vatu levu, islet off Vatu leile, Fiji.

Vatu savu, islet off Vatu leile, Fiji.

Vatu vara or Hat, Fiji; 1.2 m. in diameter, 1030 ft. high; coral, with steep cliffs on all sides; the property of an American who resides there. 17° 25′ S., 179° 32′ W.

Vatu Rhandi, New Hebrides. 13° 12′ S., 167° 40′ E. The proper form is Vatganai.

Vauvilliers, islet north from Maré, Loyalty islands.

Vavara, islet on the east side of Huaheine, Society islands.

Vavau or Vavao, Tongan islands, was first visited by Maurelle in 1781. Population in 1891 was 5084. To the south and west are many islets. 18° 38′ 20″ S., 174° 01′ W. **18.**

Vavi ai, islet in Guasop harbor on the south side of Murua or Woodlark island, of the Louisiade archipelago. **9.**

Vavitao or Ravaivai, of the Austral islands, was discovered by Captain Broughton October 23, 1791; or, as some claim, by Bonecheo in 1772; 10 m. long; high. 23° 55′ S., 147° 48′ W.

Vehanga or Bedford, in the Actæon group, Paumotu archipelago, uninhabited; 2 m. in diameter. 21° 20′ S., 136° 39′ W. **22.**

Vehi, or Wedge, is half a mile WSW. from south cape of New Guinea.

Vekai, low islet 6 m. from Tabutha, Fiji; uninhabited but frequented by turtle hunters. 17° 33′ S., 181° 11′ E.⊙

Vela la Velha is southeast from Mono, Solomon islands; 2800 ft. high. Volcanic, with fumaroles and hot springs.

Vele or Hinchinbrook, New Hebrides; northeast from Faté; 800 ft. high. See Mau.

Velerara, low and sandy island, Fiji. 16° 52′ S., 181° 00′ 45″ E.⊙

Velitoa, islet off Tongatabu, Tongan islands.

Vella Lavella, Solomon islands; 23 m. long, mountainous, with several volcanoes more than 1000 ft. high. North point is in 7° 32′ S., 156° 35′ E. **11.**

Venariwa, grassy islet 500 ft. high; 0.6×0.3 m. northwest from Moturina, Louisiade archipelago.

Vendralala, a high island in Naloa bay, Vanua levu, Fiji; inhabited. 16° 36′ 54″ S., 178° 42′ 45″ E.⊙

Ventenat, see Digaragara, Louisiade archipelago. Named for Louis Ventenat, naturalist and chaplain of the *Recherche*. **9.**

Verao, see Moso, New Hebrides.

Veriararu, islet of Tahiti, Society islands.

Vesey is east from Commodore bay, New Britain. 5° 27′ S., 150° 48′ E.

Viendrala, islet on the north coast of Vanua levu, Fiji; 99 ft. high, cultivated.

Vicuna, low island of Fiji. 16° 11′ 35″ S., 179° 50′ 25″ E.⊙

Village, an islet off the north coast of New Guinea, inhabited and connected to the mainland by a reef bare at low water.

Vincennes, see Kawehe, Paumotu archipelago. **21.**

Vingoru, one of the French islands, Bismarck archipelago. 4° 36′ S., 149° 21′ E. **10.**

Violet, islet 60 ft. high in the St. Andrew group, Admiralty islands.

Visschers, said to be three islands in the Bismarck archipelago, 1000 ft. high, coast steep. Inhabitants naked, dye their hair and tatu to some extent. Their canoes are a single log with carved ends. 2° 37′ S., 151° 58′ E. **10.**

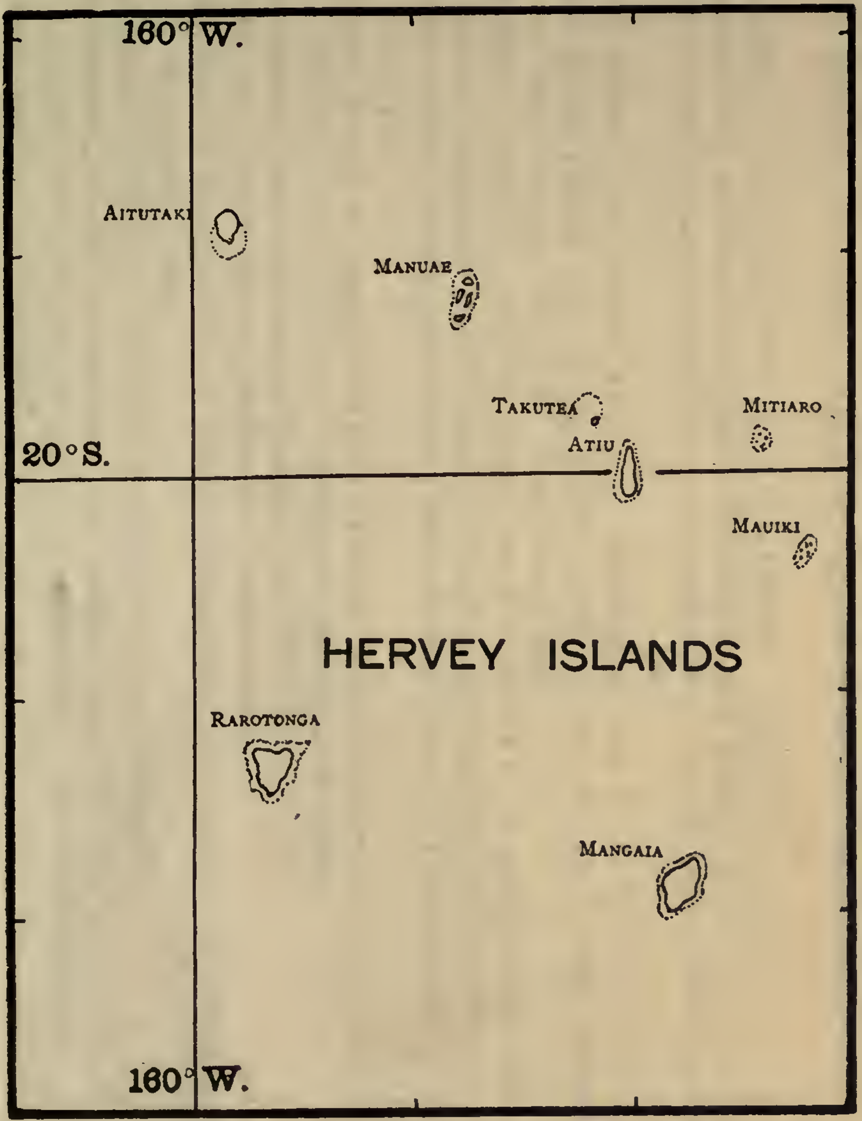
Viti, see Fiji.

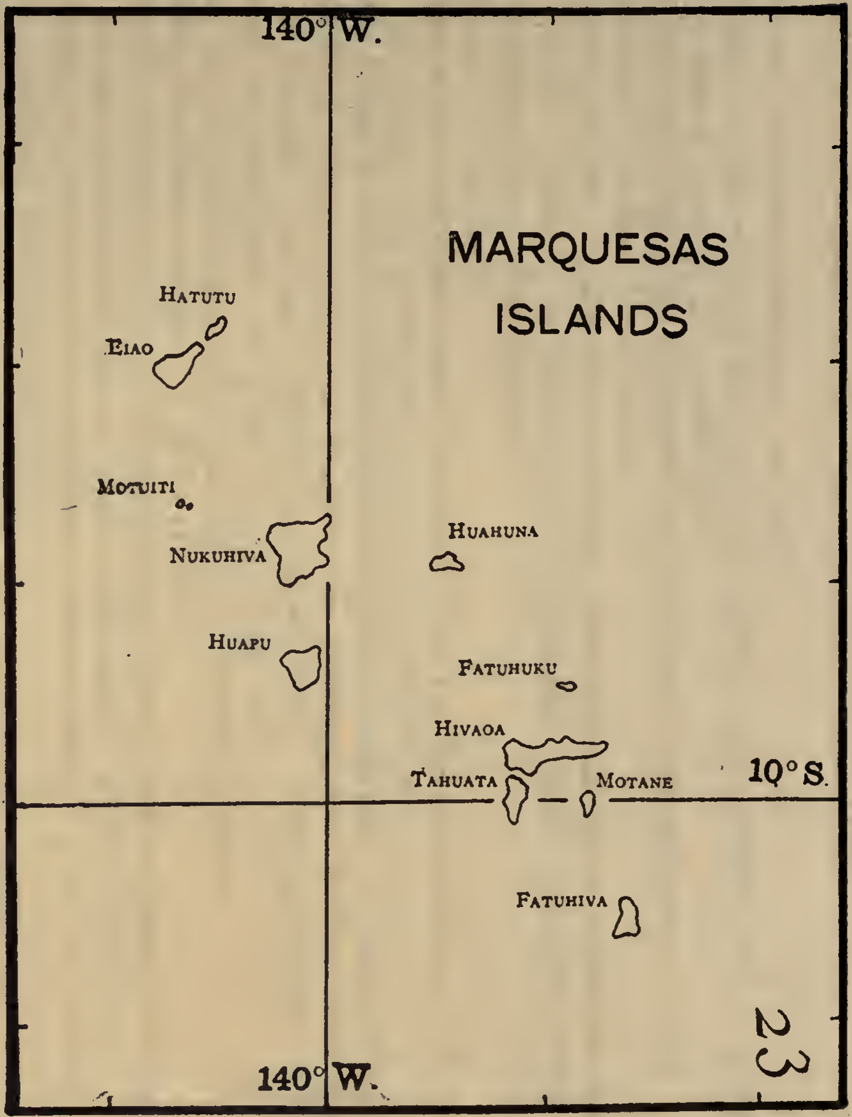
Vitora, on the southeast coast of Ysabel, Solomon islands. 8° 37′ S., 159° 46′ E.

Viwa, in the bay of Mbau, Fiji; 1×0.3 m., 160± ft. high. 17° 56′ 56″ S., 178° 39′ 25″ E.⊙

Viwa, in the Mamanutha group, Fiji; 100± ft. high. 17° 08′ S., 176° 54′ E.

Vliegen, see Rangiroa, Palliser group, Paumotu archipelago. **22.**


160° W.
Aitutaki
Manuae
Takutea
Atiu
Mitiaro
20° S.
Mauiki
HERVEY ISLANDS
Rarotonga
Mangaia
160° W.


140° W.
MARQUESAS ISLANDS
Hatutu
Eiao
Motuiti
Nukuhiva
Huahuna
Huapu
Fatuhuku
Hivaoa
Tahuata
Motane
10° S.
Fatuhiva
140° W.

23

248a

Volcano, in Anson archipelago. 22° 30′ N.

Volcano, off the northeast point of Umboi, 3500 ft. high. Dampier saw an eruption in March, 1700. 5° 32′ S., 148° 06′ E.

Volcano, on the west side of Blanche bay, New Britain, rose in February, 1878.

Volcano, see Tinakula, New Hebrides.

Volcano Islands, or Magellan archipelago, a small volcanic group south of the Bonin islands. Annexed by Japan in 1891. Arzobispo, Santo Alessandro, Sulphur, Santo Agostino. Uninhabited.

Volunteer, see Starbuck.

Vomo, on the northwest coast of Viti levu, Fiji; 2 m. in circumference, 380 ft. high, flat-topped. The south point is in 17° 30′ S., 177° 15′ E.

Vomo lailai, a rock 200 ft. high on the south side of Vomo, Fiji. 17° 29′ S., 177° 13′ E.⊙

Vostok, Wostok or Staver, was discovered by Bellingshausen in 1820; about 0.3 m. in diameter. Low, sandy, thickly covered with trees. 10° 06′ S., 152° 23′ W. British.

Votia, low island, Fiji. 17° 33′ 30″ S., 177° 26′ 20″ E.⊙

Vua, islet in the Mato passage, Great South reef of New Caledonia.

Vulan, New Guinea region. 3° 57′ S., 132° 41′ E.

Vulcan, a volcanic cone 12 m. in circumference, clothed with vegetation to a height of 3000 ft.; above that barren. Crater emits smoke. 4° 10′ S., 145° 02′ E.

Vulelua, on northeast coast of Guadalcanar, Solomon islands. 9° 29′ 15″ S., 160° 28′ E. **II.**

Vuua, a common name of Taviuni, Fiji.

Vuro, islet on the northeast point of Ono, Fiji; 270 ft. high; uninhabited.

Vuro lailai (Little Vuro), a rock 90 ft. high on the reef between Ono and Vuro.

Wabuda, at the mouth of Fly river, New Guinea. 8° 23′ S., 143° 45′ E.

Wagipa, islet southeast from Dauila, D'Entrecasteaux group. 9° 32′ S., 150° 21′ E.

Waia, in the Yasawa group, Fiji; 3 m. in diameter; 1641 ft. high. North extreme 17° 16′ S., 177° 05′ E.

Waia lailai (Little Waia); 2×1.5 m. North point is in 17° 19′ 40″ S., 177° 06′ E.

Waia lailai thake, Fiji, in the Yasawa group; 1×0.5 m., 555 ft. high, inhabited. 17° 22′ 20″ S., 177° 06′ 10″ E. Observatory Hill.

Waiben or Thursday, in Torres strait. 10° 36′ S., 142° 12′ E. A port of call for steamers between Singapore and Brisbane; in telegraphic connection with the latter.

Waier or Wyer, within the same reef with Mer and Dauer, in Torres strait. 9° 54′ S., 144° 02′ E.

Waigiu, 80×20 m., rugged and hilly; Papuan, with wild tribes in the interior. East end is in 0° 20′ S., 131° 20′ E. Subject to the Sultan of Tidore.

Waiheke, in Auckland harbor, Hauraki gulf, New Zealand.

Waihu, an old chart name for Rapanui or Easter island.

Waikatu, the largest of the St. Andrew group, Admiralty islands. Inhabitants seem to be a superior race.

Waikawa, Te Houra or Portland, in Hawke bay, New Zealand.

Wailagilala, low islet of sand and coral in the Lau group, Fiji; 9×3 cables, at the northeast corner of a lagoon 9 m. in circumference. Also Weilangilala.

Waima, see Uen, New Caledonia.

Wainwright, see Akamaru, islet of Mangareva. **22.**

Wakaia or Wakaya, 10 m. east from Ovalau, Fiji; 4×1.5 m., 595 ft. high. North point is in 17° 35′ 16″ S., 179° 02′ E.

Wake was discovered in 1796 from the *Prince William Henry*, but it is probably the San Francisco of Mendaña; 20–25 m. long, 8 ft. high. When I saw it from the masthead of the ship *Oracle*, in 1865, it was covered with a low and sparse vegetation. 19° 15′ N., 166° 30′ E. Annexed by the United States in July, 1898.

Waldron, a small island in the Hudson group, near Viti levu, Fiji. 17° 51′ S., 177° 09′ 30″ E.⊙ Named for Purser R. R. Waldron of the Wilkes Expedition.

Walibi, islet of Panatinani, Louisiade archipelago; 140 ft. high, grassy.

Walker, in the Hudson group, Fiji. 17° 34′ 30″ S., 177° 03′ 10″ E.⊙ Named for Lieutenant W. M. Walker of the Wilkes Expedition.

Walker, discovered by Captain Walker in 1814. 3° 34′ N., 149° 15′ W. Existence doubtful.

Wallis (Red), in Torres strait. 10° 50′ S., 142° 02′ E.

Wallis (Woody), in Torres strait. 10° 52′ S., 142° 02′ E.

Wallis, islet of Port Praslin, New Ireland. 4° 48′ S., 152° 47′ E.

Wallis, see Uvea. **18.**

Walo, islet north of Port Stanley, on the coast of Malekula, New Hebrides.

Walpole, Loyalty islands, was discovered November 17, 1794, by Captain Butler of the *Walpole*. 22° 38′ 07″ S., 168° 56′ 45″ E.

Wanim or Grass, in the Louisiade archipelago; 1.5 m. N-S., 390 ft. high.

Warematа or East, in the Bonvouloir group, Louisiade archipelago, is 500 ft. high, densely wooded. 10° 26′ S., 152° 03′ E.

Wanawana, an extensive, low, densely wooded island off the west side of New Georgia (Marovo), Solomon islands. 8° 12′ S., 157° 07′ E.

Waratap, on the east side of South bay of Faté, New Hebrides.

Wari or Teste, between the Louisiades and New Guinea: called Teste by D'Urville; 2.5 m. E-W., 0.2 m. wide; inhabited by uncouth natives who wear human jaw bones as armlets. 10° 57′ 55″ S., 151° 03′ 20″ E. **9.**

Wariura, 8° 22′ S., 143° 24′ E.

Warren Hastings, see Pulo Marière, Caroline islands. 4° 20′ N., 132° 28′ E.

Warrior, see Tut on the south coast of New Guinea.

Wasau = Faiva, islet of Uea, Loyalty islands.

Washington, New York or Prospect, was discovered by Captain Fanning in 1798; 3.2×1.2 m., 10 ft. above the sea; covered with coconut and other trees. No lagoon, but a fresh water pond. 4° 41′ 35″ N., 160° 15′ 37″ W. (Fig. 12.)

Washington, see Huahuna, Marquesas islands.

Wasima, 175 ft. high, southeast from Dituna point, southeast coast of New Guinea.

Wasp, islet near Layard islands on the north coast of New Guinea.

Wateeoo = Atin, Hervey islands.

Waterlandt, of Schouten and Lemaire, is Manihi of the Paumotu archipelago. **21.**

Watmough, a low island off Viti levu, Fiji. 17° 45′ 50″ S., 177° 20′ 40″ E.⊙

Watson, islet off Blanche harbor, Mono, Solomon islands.

Watts, see Ailuk of the Marshall islands. **6.**

Watts, see Kuriva in the Engineer group, Louisiade archipelago.

Wavi ai, see Vavi ai, Woodlark or Murua.

Wea or Emery, of the Atana islands, northwest from Rotuma.

Webb, 2–3 islets covered with coconut trees, near Roux islands, New Guinea. Also called Ulawabai.

Wedge, islet of Stewart island, New Zealand.

Wedge = Vehi, on the southeast coast of New Guinea.

Wednesday, in Torres strait. 10° 32′ S., 142° 18′ E.

Weeks was seen by Captain Gelett, of the *Morning Star*, in 24° 04′ N., 154° 02′ E., December 17, 1864. It had been previously reported. About 5 m. long, densely wooded with trees and shrubs; a knoll in the centre rising 200 ft. above the sea. Uncertain on charts.

Weitoa or O'Neill, on the southeast coast of New Guinea; nearly 2 m. NW-SE., and 580 ft. high. 10° 41′ S., 150° 56′ E.

Welle, see Raputata of the D'Entrecasteaux group. **9.**

Wellesley, group in the Gulf of Carpentaria, of which Mornington is the largest. The others are: Rocky, Pisonia, Beautiful, Forsyth, Bentinck, Allen, Sweers and Fowler.

Wellington, see Alapawa, New Zealand.

Wellington, see Mokil of Caroline islands. **5.**

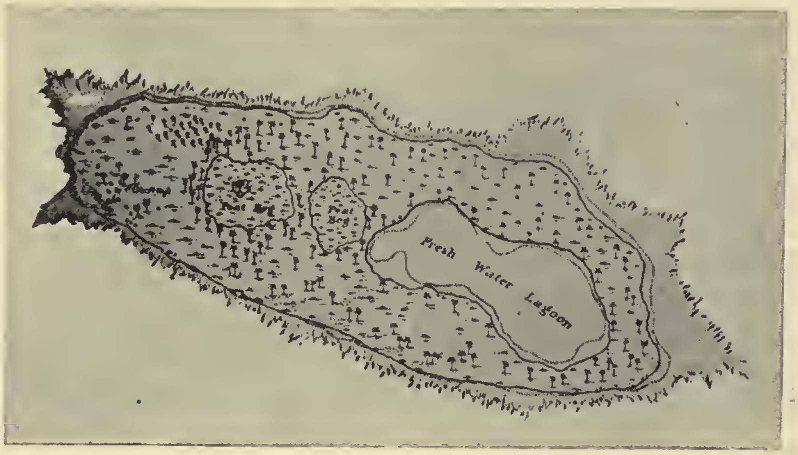


FIG. 12. WASHINGTON ISLAND.

Wenman, of the Galapagos, the fragment of a volcano now 830 ft. high.

West, islet of Kandavu, Fiji; 25 ft. high.

West, islet of Niuatobutabu, Tongan islands; 70 ft. high, 0.7 m. in diameter.

West, in Torres strait. 10° 33′ 45″ S., 150° 48′ 25″ E.

West, islet south side of Umboi, Bismarck archipelago; 150 ft. high.

West, islet off Cape Queen Charlotte, west side of New Hanover; inhabited. 2° 26′ S., 149° 55′ E.

West Danger, of the Marshall islands.

Western, a group of the Admiralty islands. 2° 12′ S., 148° 00′ 40″ E. **10.**

Whakari or White, in the Bay of Plenty, New Zealand.

Whale (La Baleine), see Isénay of the Pleiades group, Loyalty islands. **13.**

White, see Whakari, New Zealand.

Whitsunday, see Nganati of the Paumotu archipelago. **21.**

Whitsunday, see Nukutavake.

Whitsunday, on the Australian coast. 20° 15′ S., 149° 02′ E.

Whitsuntide, see Arag, New Hebrides.

Whittle, Fiji. 18° 50′ 30″ S., 178° 25′ 30″ E.⊙

Whytohee, see Napuka of the Paumotu archipelago. **21.**

Wiak, see Schouten.

Wiakow, on the north part of the outer ring of Egum atoll, Trobriand group. 9° 20′ 30″ S., 151° 58′ E.

Wild, of the Admiralty group; 0.7 m. long. Named for J. J. Wild, artist on the *Challenger*. 1° 55′ 10″ S., 146° 40′ 56″ E.

Willaumez, now ascertained to be a part of New Britain. Named for one of the officers of D'Entrecasteaux, Ensign on the *Recherche*.

William IV., see Ant of the Andema group, Caroline islands.

Williams, one of the Tiri islands off Vanua levu, Fiji. 16° 24′ 45″ S., 179° 06′ 22″ E.⊙

Wilson, islet off Blanche harbor of Mono island, Solomon islands.

Wilson, see Ifalik, Caroline islands. **3.**

Wilson, a name of the Duff islands, so called because seen by Captain Wilson, September, 1797.

Wilson, see Manihi of the Paumotu archipelago. **21.**

Wittgenstein, see Fakarawa of Paumotu archipelago. So named by Bellingshausen. **21.**

Woahoo=Oahu, Hawaiian islands. Old English name found on charts with Owhyhee.

Wolea or Ulie, Caroline islands, was discovered by Captain Wilson in the *Duff* in 1793. Wooded and inhabited atoll 0.7 m. in diameter, with 22 islets. North end 7° 23′ 30″ N., 143° 57′ E. **3.**

Woles, islet of Ruk, Caroline islands.

Wolkonski, see Takurea of the Paumotu archipelago. **21.**

Woodlark, see Murua, Kiriwina group.

Woodle, see Kuria of the Gilbert islands.

Woody, opposite Entrance island in Torres strait. 10° 40′ S., 142° 20′ E.

Woody, islet in Arembo bay, on the southwest side of New Caledonia.

Woody, see Panaman of the Louisiade archipelago.

Wostok, a form of Vostok.

Wotja, the westernmost islet of Odia atoll, Marshall islands. There is much confusion with a similar name in the Romanzow atoll.

Wotje, Odia or Romanzow, of the Marshall islands, extends 29 m. E-W., with a width from 6–12 m. There are 65 islets on the reef. Christmas harbor, of Kotzebue, is in 9° 28′ 09″ N., 170° 16′ 05″ E. **6.**

Wotto, of the Marshall islands, was discovered by Captain Shanz of the Russian navy. It is 18 m. long and 4–12 m. wide. 10° 05′ N., 166° 04′ E.⊙

Wrack, in the Bismarck archipelago. 3° 15′ S., 154° 31′ E.

Wuli or High, on the northwest coast of Roua, Louisiade archipelago; 1.4 m. E-W., 300 ft. high; inhabited and cultivated. 11° 42′ S., 154° 02′ E.

Wyer, a form of Waier, Torres strait.

Wytoohee, see Napuka, Paumotu archipelago. Disappointment islands of Byron.

Yaba, islet in Banaré bay, on the northwest coast of New Caledonia.

Yabwat, see Jabwat, Marshall islands.

Yaga, of the Kiriwina islands.

Yakimoan, islet northwest from Panawina, Louisiade archipelago.

Yalangalala, uninhabited islet, Fiji. 16° 49′ 30″ S., 180° 57′ 20″ E.⊙

Yambu, uninhabited island, 170 ft. high near Vuro, off Kandavu, Fiji.

Yamiga, islet on the southwest coast of New Guinea.

Yandé, 6 m. west from Paâbâ on the northwest coast of New Caledonia; 1070 ft. high, inhabited and well cultivated.

Yandua, high, inhabited island, 12 m. in circumference; Loto peak, 875 ft. high, is in 16° 49′ S., 178° 16′ E.

Yanguel, see Kayangle of the Pelew islands.

Yanganga, islet 887 ft. high on the north coast of Vanua levu, Fiji.

Yaniba, largest of the group on the north side of the outer ring of Egum atoll; 14 islets, the highest 150 ft. Population 200. 9° 20′ 30″ S., 151° 55′ E.

Yanutha lailai and **Yanutha levu,** two islets between Ovalau and Moturiki, Fiji.

Yanutha loa, off the west coast of Vanua mbalavu, Fiji; 160 ft. high.

Yanuya, inhabited island of the Mamanutha i thake group, Fiji.

Yanu yanu eloma, grassy islet 140 ft. high on the Kandavu reef, Fiji.

Yanu yanu sau, islet 80 ft. high on the reef of Kandavu, Fiji.

Yap or Ouap, of the Caroline islands, is on a reef 35×5 m. A volcanic peak 1170 ft. high. The north islet is in 9° 37′ N., 138° 08′ E. Population 8000, Malay with slight Polynesian admixture. The stone money of the group consists of wheels of aragonite from 6 in. to 12 ft. in diameter. See photograph in *The Caroline Islands*, by F. W. Christian, 1899, p. 236.

Yaroua, islet of Tuvutha, Lau group, Fiji.

Yarru, on the New Guinea coast. 9° 07′ S., 143° 12′ E.

Yaruman, islet 285 ft. high, northeast from Pana numara, Louisiade archipelago.

Yasau-i-lau, near Yasawa, Fiji; 0.5 m. long, 437 ft. high. 16° 51′ 40″ S., 177° 26′ 40″ E.⊙

Yasawa group, Fiji, consists of Timboor, Kiusick, Yasawa, Asawa, Ovawa, Androna, Yasawailau, Otovawa, Nansia, Nangati, Matathoni levu, Yangati, Naviti, Eld, Fox, Agate, Sinclair, Waia, Waialailai, Waia lailai thake, Biwa, Knox, Ombi, Baldwin, Davis, Totten, Lewin, Vomo.

Yasawa, inhabited island 8×2 m., 781 ft. high, in the group to which it gives name. The north point is in 16° 43′ S., 177° 30′ 05″ E. **14.**

Yaukuve or May, islet of Ono, Fiji; 400 ft. high.

Yaukuve lailai, near by, is 200 ft. high.

Yavurimba, uninhabited islet of Mamanutha ira group, Fiji.

Yavutha, islet 240 ft. high, of the Angasa group, Fiji.

Yeccla, islet of the Carteret group. Bismarck archipelago.

Yeharnu, islet of the Carteret group.

Yeina, north from Tagula, Louisiade archipelago. 11° 20′ S., 153° 28′ E.

Yendua, see Yandua, Fiji.

Yengiébane, islet near Paâbâ on the northwest coast of New Caledonia.

Yenoé, islet in Banaré bay on the northwest coast of New Caledonia.

Yermaloff, of Bellingshausen, is Taenga of the Paumotu archipelago. **21.**

York, a group in Torres strait, 9° 44′ S., 143° 25′ E. This group is shown on the Surveyor-General's fine map of Queensland and British New Guinea, 1896, but I have been unable to find any description.

York, Duke of, an interesting group, of volcanic origin, between New Ireland and New Britain in St. George channel.

York, Duke of, see Atáfu of the Union group. **17.** Wallis gave this name to Eimeo, Society islands.

Young, on the Australian coast. 12° 07′ S., 143° 12′ E.

Yovo, islet of the Carteret group, Bismarck archipelago.

Yowl, a group of 16 low islands on the west coast of New Guinea. 0° 25′ N., 131° 00′ E. Papuan. Group surrounded by a coral reef 60 m. in circumference. This belongs to the Moluccas and is not properly included in our region.

Ysabel or Bogotu, the Camba of Mendaña, Solomon islands. The full name was Santa Ysabel de la Estrella; 125 m. NW-SE. by 25 m., 3900 ft. high. The Melanesian mission has several stations here. The northeast point is in 7° 18′ S., 158° 08′ E.

Ythata, high, inhabited island north from Vaturera, Fiji; 2.5 m. E-W., 1 m. N-S. East point is in 17° 17′ S., 179° 34′ 30″ E.

Yule, see Roro.

Zarpane is a name of Rota of the Marianas.

Zet, islet off the north end of Loof, Hermit group. **8.**

Zeune, a small group on the southeast coast of Bougainville, Solomon islands. 6° 17′ S., 155° 48′ E.

Zille, islet in Dampier strait.

Zoller, off the southwest end of Bouka, Solomon islands. 5° 25′ S., 154° 32′ E.

Zuckerhut, of the Admiralty group. 2° 24′ S., 146° 49′ E.

ADDENDA ET CORRIGENDA.

Asie, Solomon islands. All the islets of the Solomon islands and of Ontong Java in this supplementary list were taken into British jurisdiction by treaty with Germany as mentioned under Solomon islands.
Benana, Solomon islands.
Dauahaida or Marokau, of the Paumotu archipelago.
Engaulii, islet of Ontong Java.
Faise, Solomon islands.
Grampus islands are attributed to Captain Meares, April 4, 1788, in 25° 15′ N., 146° E. Two islands close together, another southwest from these. Perhaps the Sebastian Lopez of the Spanish charts.
Lehuanu, islet of Ontong Java.
Loto, Solomon islands.
Malabrigos or Margaret, a group of three islands discovered by Captain Magee in 1773, in 27° 20′ N., 145° 45′ E. Perhaps the Malabrigos (bad shelter) of Torres in 1543, but the identification is uncertain.
Marakau = Marokau, of the Paumotu archipelago.
Margaret, see Malabrigos above.
Mongava, a name of Rennel, Solomon islands.
Mongiki, a name of Bellona, Solomon islands.
Nee, islet of Ontong Java.
Niellei, Solomon islands.
Nieue = Niüe or Savage. The Jurisdiction of Her Britannic Majesty's High Commissioner's Court for the Western Pacific was extended to Niüe October 19, 1899.
Nufahana, Solomon islands.
Nusakoa, Solomon islands.
Nusave, Solomon islands.
Oikuo, islet of Ontong Java.
Oku, islet of Ontong Java.
Palav, islet of Ontong Java.
Piedu, Solomon islands.
Porporang, Solomon islands.

Kalan, p. 82, should be Kalau.
Leuneuwa, p. 90, should be Leueneuwa.
Oua raha, p. 126, should be Owa raha.

DIVISION OF THE PACIFIC AMONG THE NATIONS.

The present ownership of the islands of the Pacific Ocean, whether by outright annexation, purchase or protectorate, is as follows:

Great Britain.—Australia, Tasmania, islands of Torres strait, S. E. New Guinea, Louisiade archipelago, Solomon islands (except northwest corner), Santa Cruz, Lord Howe, Norfolk, Kermadec, Chatham, New Zealand, Fiji, Ellice, Gilbert, Phœnix, Union, Tonga, Niüe, Line islands, Hervey (Cook), Pitcairn, Henderson, Ducie and Oeno of the Paumotu archipelago.

Germany.—N. E. New Guinea, Bismarck archipelago, N. W. Solomon islands, Pelew, Marianas (except Guam), Caroline archipelago, Marshall islands and Western Samoa.

France.—New Caledonia, Uvea, Society islands, Paumotu archipelago (except islands in the southeast extreme), and Marquesas islands.

The New Hebrides are jointly watched or protected by Great Britain and France.

United States.—Hawaiian group, Wake, Guam and Eastern Samoan islands.

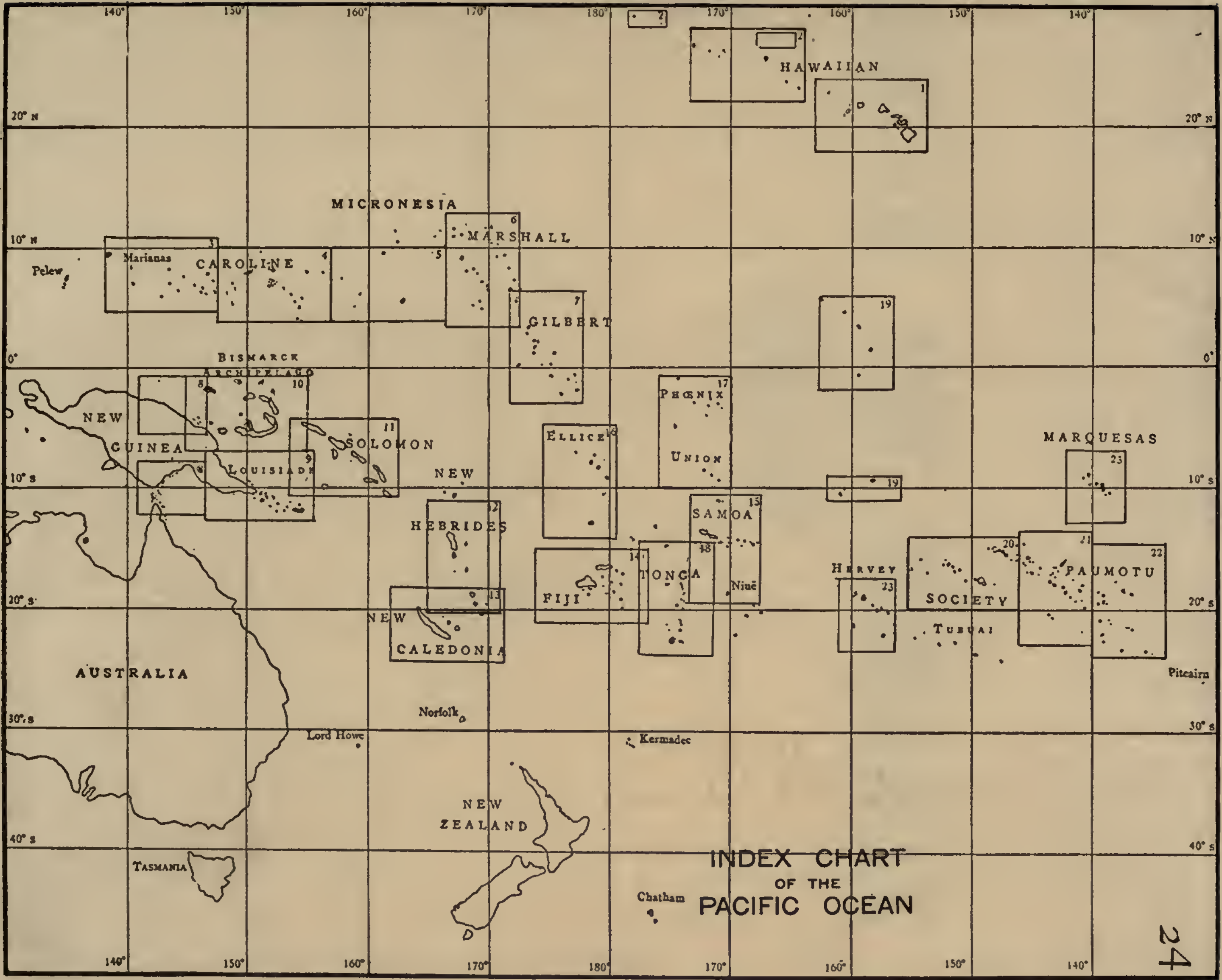
Holland.—Western New Guinea.

Japan.—Bonin and Marcus islands.

Equador.—Galapagos group.

Chile.—Rapanui or Easter island, Juan Fernandez group, and St. Felix islands.

Issued December, 1900.



INDEX CHART OF THE PACIFIC OCEAN

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A

KEY

TO THE

BIRDS OF THE HAWAIIAN GROUP.

BY

WILLIAM ALANSON BRYAN,

CURATOR OF ORNITHOLOGY IN THE MUSEUM.

HONOLULU, H. I.:
BISHOP MUSEUM PRESS.
1901.

FOREWORD.

THE following preliminary key to the birds of the Hawaiian possessions is based on a study of the collection of birds in the Bernice Pauahi Bishop Museum, which institution now possesses the most representative collection of the Hawaiian avifauna extant. The collection at this time numbers upwards of six hundred specimens, embracing the famous Mills collection, a series of skins collected by Mr. Palmer for the Rothschild museum, a valuable collection made by Mr. R. C. L. Perkins, together with collections by Messrs. W. H. Hall, F. Gay, A. F. Judd, and others. To the above collection almost daily additions are now being made through the efforts of the Museum's skilled collector, Mr. A. Seale.

By the Hawaiian possessions it is intended to include all of the chain composed of some twenty or more islands lying in the central North Pacific ocean, stretching over an area extending from about 150° West Longitude to 175° East Longitude, and from 18° to 30° North Latitude.

Though following the scheme usually adopted by systematic zoologists in the making of analytical keys there is some slight difference in the arrangement of the text. Since it may be necessary for persons not entirely familiar with keys to make use of the following pages, it might be well to say that the fundamental characters are used for the separation and identification of species instead of lengthy and oftentimes misleading detailed descriptions. To facilitate this, dichotomous antithesis is strictly adhered to, so that there are but two alternatives; the specimen must conform to the characters given, for example, under **a,** or the whole matter under **a,**—that is, the sub-heads **b, bb, c, cc,** etc., (if there are any) must be passed over until **aa** is arrived at, which is of equal value with and the only alternative of the division **a.** If it is settled that the specimen corresponds with the characters given under **aa,** the next step is to settle between the heads **b** and **bb,** then pass to **c** and **cc,** and so on, taking up the characters in their natural order until finally the reference page is given, where the key will be found continued. Thus the key to the higher orders will be found on the last pages of the Memoir, and will indicate the order to which the bird belongs and the page where the order is treated. Similarly the order will be broken up into families, the families into genera, and lastly the genera into species. The index letters are in bold type, and characters of equal value are placed immediately under each other, while the minor divisions are indented farther and farther to the right. Hence **bb** is found set in an equal distance from the left-hand margin as **b; cc** is still farther indented, but the same distance as **c,** while the body of the text extends the full distance across the page.

The measurements are, for the most part, taken from specimens in the Bishop Museum, and are given in English inches and hundredths. The length of the wing is measured from the bend (*i. e.*, the carpal joint) to the tip of the longest primary. The length of the tail is from the apparent base to the tip of longest feather. The length of the culmen is the distance from the base of the upper mandible on top to the tip of the same in a straight line. This measurement, as well as all of the more exact ones, are best taken with the dividers. The depth of the bill is a vertical line from the base of the upper mandible through both mandibles. The length of the tarsus is measured from the enlargement on the front outside of the tibio-tarsal (*i. e.*, the "knee") joint to the more or less obvious beginning of the middle toe. The middle toe is measured in a straight line along the top from the last-mentioned point to the tip of the nail.

In bringing together the key I have made free and frequent use of the catalogue of birds in the British Museum, and Ridgway's Manual of North American Birds, together with the valuable contributions to our knowledge of the Hawaiian ornithology—Aves Hawaiiensis, by Messrs. Wilson and Evans, and Avifauna of Laysan, etc. I have also had at hand the published notes of Messrs. Gadow, Dole, Perkins, Stejneger, and others. In addition to the above I have had the pleasure of examining the material in the National Museum at Washington, D. C., the Philadelphia Academy of Science, the British Museum, Tring Museum, and the Jardin des Plantes. To all of these sources of information I would make grateful acknowledgement of the service they have rendered.

WM. ALANSON BRYAN.

BIRDS OF THE HAWAIIAN GROUP.

Order LONGIPENNES.—Long-winged Swimmers.[1]

Families.

With the lower mandible not longer than the upper one and only moderately compressed, while the covering of the upper mandible is made up of one solid piece (*i. e.*, with the seams fused together, no "nail" at the tip, etc.), through which the nostrils are pierced.

FAMILY **LAR'IDÆ.**—GULLS AND TERNS.

Genera.

a. Bill rather short, and deeper at the angle than at the nasal openings; the upper mandible longer and bent down over the lower one; tail usually even (Sub-family *Larinæ*); tarsus not roughened nor serrate behind; hind toe moderately well developed; culmen more than two-thirds the length of tarsus; nostrils linear or linear ovate.. (Page 6.) **Larus.**

aa. Bill slender with both mandibles about equal in length; tail slightly or decidedly forked; angle of the lower mandible not prominent. (Sub-family *Sterninæ.*)

b. Tail more or less deeply forked; head without plumes at the gape; tarsus shorter than the middle toe and claw; outer tail feathers the longest, and pointed; tail generally more than half the length of the wing; bill compressed and slender; tarsus never exceeding and generally shorter than the middle toe and claw; depth of bill at base less than one-third the exposed culmen............. (Page 7.) **Sterna.**

bb. Tail graduated, pointed; outer pair shorter than the next pair; middle toe shorter than the exposed culmen; distance from the angle of the gonys to the tip of the bill less than to the gape.

c. Tail feathers not all pure white.

d. Fourth pair of tail feathers from the outside the longest; wing more than 9.50.......................................(Page 9.) **An'oüs.**

dd. Third pair of tail feathers from the outside the longest; wing less than 9.50..................................(Page 9.) **Microan'oüs.**

cc. Tail feathers all pure white.................(Page 9.) **Gygis.**

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[1] For the Key to the Higher Orders see last pages of the Memoir.

GENUS **LA'RUS** LINNÆUS.

a. Head entirely white in the summer adults.

b. Primaries uniform pale grey, with no black, and fading gradually into white at the tips (larger, wing more than 16.00). Head, neck, tail and under parts white; mantle grey; the scapulars and secondaries white at their tips. *Female* smaller, often considerably so. *Adult in winter:* Mottled and streaked with pale brown on the head and neck; back and under parts also mottled. *Immature:* The mottling on the upper surface gradually disappears and for a short time the bird appears to be a creamy white. *Young:* Both the upper and under surface streaked and mottled with ash-brown on a paler ground color; the feathers of the mantle margined with buffish white which produces a creamy appearance; upper and under coverts rather boldly marked with brown (Saunders). Length about 25.00–28.00, wing 16.25–18.00 (17.12), tail 7.00–7.50, culmen 2.30–2.70, tarsus 2.40–2.78 (2.57), middle toe with claw 2.35–2.75 (2.55). *Hab.* Bering Sea and adjacent waters northward to Point Barrow; southward in winter to Japan (Ridgway). Kauai,[2] Maui.

1. L. barrovianus[3] RIDGW. **Point Barrow Gull.**

bb. Primaries marked with distinct white tips and dark (black) subterminal spaces; the two outer primaries with a distinct grey wedge on the inner web in the summer adults; depth of bill through the angle .50 or more; mantle blue-grey or dark pearl-grey in adults.

c. Larger, length 20.00–23.00, culmen 1.65–2.15, mantle darker grey than in the following species; scapulars and secondaries broadly tipped with white; the outer primary with a large portion of black; the first, chiefly black with about 2.00 of the terminal portion white; the second, with a small grey wedge basally; the third, fourth and fifth, black with white tips and increasing grey wedges; bill, bright yellow with an irregularly shaped spot of intense carmine near the tip of the lower mandible, and a dark spot or bar usually anterior to this on one or both mandibles. *Female* smaller and duller in color. *Adult in winter:* Like the above but head and neck streaked with greyish brown. *Immature:* Autumn birds of the second year show grey on the mantle; upper tail coverts begin to show grey at their bases; tail feathers more uniform umber brown than before, though the coverts are whiter; under parts whitish brown without distinct spots; bill yellower at the base. *Young:* Much darker brown throughout; no signs of grey on the secondaries nor the basal portion of the inner primaries, the paler inner webs being nearly dull brown; tail coverts broadly and closely barred; tail feathers umber brown with dull white tips; bill brownish basally, black terminally; tarsi and toes brown; wing 15.00–16.75, depth of bill at the angle .60–.75, tarsus 2.00–2.60, middle toe and claw about 2.10. *Hab.* Western North America, wintering on the Pacific coast. Hawaiian Islands (accidental; one specimen in St. Louis College cabinet).

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[2] The single specimen in the Museum collection is one of two taken on the island of Kauai by Mr. Francis Gay. Both specimens were taken late in the autumn months. While neither specimen agrees as closely with the descriptions at hand as would be desirable, I have seen fit to refer them to *barrovianus*, believing them to be immature birds of that form. This is probably the undetermined species mentioned by Kittlitz. The following measurements are taken from the Museum specimen No. 9305: Length 25.50, culmen 2.00, tail 6.50, tarsus 2.85, toe 2.75; locality, Kauai, H. I.; date, 1899, autumn. There is also a specimen in the cabinet of St. Louis College, Honolulu, taken on Maui by Brother Matthias.

[3] *Larus glaucus*, Brünn, from Laysan (*Dr. Schauinsland*); Hawaii (Henshaw, in Auk, Vol. XVII., p. 201).

2. **L. californ'icus** Lawr. **California Gull.**

cc. Smaller, length 18.00–20.00; mantle lighter grey; bill with a black band in adult. *Adult:* Bill greenish yellow, crossed near the end by a distinct black band; tip sometimes orange; feet pale yellow. *Immature:* Head slightly streaked; mantle grey with a few brown feathers about the bend of the wing; outer primary without indication of a white spot; tail feathers white with the remains of the broad dark subterminal band. *Young:* Above brownish dusky varied with dull buffish white; quills blackish, the shorter ones greyish basally with white tips; bill blackish, paler at the base; wing 13.25–15.25, culmen 1.55–1.75, depth of bill at angle .50–.65. *Hab.* Whole of North America. Hawaiian Islands (accidental; one specimen in St. Louis College cabinet).

3. **L. delawaren'sis** Ord. **Ring-billed Gull.**

aa. Head uniform black or dusky in summer adults; lower parts, rump and tail pure white; mantle grey; tarsus not longer than the middle toe and claw; wing more than 10.00 (culmen more than 1.00); bill reddish brown, with a darker subterminal band; head and upper part of the neck plumbeous black with a conspicuous elongated white patch both above and below the eye; lower parts white with a rosy blush in freshly killed birds; the secondaries broadly edged with white; primaries all tipped with white and all bluish grey next the shafts on the upper part, except the outermost which has the outer web black and some white on the inner web, with a black subterminal bar. *Female* similar. *Adult winter:* Like above with the head white, spotted and mottled with blackish on the upper surface. *Immature:* Similar, but with a larger proportion of black in the primaries. Length 13.50, tail 4.25, tarsus 1.47, toe with claw 1.50, culmen 1.25, depth of bill at gonys .32, wing 11.25. *Hab.* Interior of North America from Iowa northward, breeding; south to Middle America and Western South America to Peru. Maui.[4]

4. **L. franklin'ii** Sw. & Rich. **Franklin's Gull.**

Genus **STERNA** Linnæus.

a. Crown black in the breeding plumage (more or less varied with white in winter); wings rarely over 12.00; both webs of the outer tail feathers white at the base.

b. Mantle, back of neck, rump, upper tail coverts and all the tail feathers except the outer ones (streamers) uniform sooty black; forehead and superciliary stripe white; *superciliary stripe not reaching back over the eye;* under parts white with a greyish tinge on the abdomen; bill and feet black. *Winter adult:* Like above except with white flecked through the black of lores and crown. *Young:*[5] Brownish black above, darkest on the upper wing coverts; outer tail feathers almost as sooty black as middle ones, except towards their tips. *Half-fledged birds:* Feathers of the mantle are blackish with broad white tips. Length 15.00–17.00, wings 11.75–12.00, tail 7.00–7.50 (forked for more than 3.00), tarsus .95–1.00, toe .99–1.05, culmen 1.80–1.85, depth of bill .45–.48, gonys .85. *Hab.* Tropical and juxta-tropical seas. Hawaiian Islands.

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[4] The above description and measurements are based on the single *winter* specimen in the cabinet of St. Louis College, Oahu. The specimen was taken by Brother Matthias on Maui, and is the first record of the species being taken here.

Pl. XVI., 9153, 9155. **5. S. fuligino'sa** Gmel. **Sooty Tern.**

bb. Back, rump, tail coverts, wing coverts, outer edge of secondaries and tail feathers, except the outer pair, dark sooty grey; crown, lores and nape black; primaries chiefly smoky grey with the white wedges on the inner webs; wings never less than 10.00; under parts and forehead, white; *white superciliary stripe extending back over the eye. Winter adult:* Similar to the above, but showing more white in the forehead. *Young:* Mantle with more brownish tinge of grey; head mottled black and white; wing 10.75, culmen 1.60, tarsus .85, toe 1.15. *Hab.* Central Pacific Ocean. Laysan, etc.

6. S. luna'ta (Peale). **Grey-backed Tern.**

aa. Crown always white, sometimes with a brownish tinge; nape, orbit and ear coverts black; mantle pale grey; in front of the eye a black triangular patch, the point of which does not reach to the base of the bill; from the eyes a black band extending about the back of the head; band broadened and more or less prolonged down the back of the neck; neck and under parts white; mantle and rump pearl grey; shafts of the primaries white; outer primary with the outer web blackish, streak next the shaft on the inner web blackish or greyish black. *Winter adult:*[6] Similar, with less black about the head. *Immature:* Similar to the above, but there is a brownish tinge to the back of the nape, the wing coverts are ash-grey, and a dark line runs along the carpal joint (Saunders). *Young:* Forehead and crown buffish white with a black streak which becomes confluent on the nape; feathers of the mantle and tail grey, barred with ash-brown and tipped with buff. Length about 13.25–13.50, wing 9.50–10.00, tail 3.90–4.40, bill 1.25–1.40, tarsus .75–.80, toe .95–1.00. *Hab.* Southern and Western Pacific Ocean, north through Polynesia generally, the Philippine Islands and China. Its range appears to depend in a great measure upon the existence of coral islands of a certain size, and is probably still more extensive (Saunders). Kauai; accidental.

7. S. melanau'chen Temm.

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[5] A September bird from Laysan Island has the head and neck dark sooty brown; lighter sooty brown below, extending back to the abdomen and over the flanks; belly white; tail uniform blackish brown, both inner and outer webs tipped with dirty white; upper tail coverts, rump, and greater wing coverts uniform with the tail; lesser wing coverts darker, edged with fulvous or whitish; edge of wing white, under wing coverts stone-grey. Length about 14.75, wing 10.25, tail 5.25, tarsus .90, toe 1.05, bill 1.25, gonys .45, depth of bill .35. As may be seen by the above the bill pattern is totally different from adult *fuliginosa* as well as some slight variation in all of the other measurements. It was with difficulty that the specimen was made out *fuliginosa*.

[6] The two specimens in the Museum were taken at Mana, Kauai, by Mr. A. F. Judd during the winter of 1892–3. Both have the white foreheads assumed by this species, while the remainder of the plumage is badly worn. This seems to be the first record of this species being taken in the Hawaiian Islands. The above measurements are taken from these specimens. The *S. bergii* of Dole has never been noted from Hawaii since his early reference to it, *Proc. Bost. Soc. Nat. Hist.*, 1869, p. 306. *Bergii* is, in general appearance, somewhat similar to *melanauchen*, though the former is much the larger (length .20–.21, wing 14.25, bill 2.05).

Genus **ANOUS** Leach.

Plumage uniform sooty brown, becoming hoary on the forehead and top of the head (larger, wing 10.30–11.00); crown and forehead lavender-grey. *Summer adult:* Forehead nearly white at the base of bill, passing to lavender-grey, which becomes lavender on the hind neck; primaries and tail feathers nearly black. *Adult female:* Similar, but a trifle smaller and with a weaker bill. *Young* similar. Length 13.00–16.25, wing 10.30–11.00, culmen 1.70–1.75, tarsus .90–.93, tail 5.90–6.25, toe 1.52–1.55, depth of beak .40. *Hab.* Tropical and juxta-tropical seas, wide-ranging. Hawaiian Islands.

Pl. XVI., 7903, 9157; XVII., 7900. **8. A. stol'idus**[7] (Linn.). **Noddy.**

Genus **MICROANOUS** Saunders.

Middle toe and claw shorter than the exposed culmen; bill slender and long; the distance from the angle of the gonys to the tip of the bill greater than to that of the gape; lores deep black; cheeks decided plumbeous; nape, shoulders and tail, dull lavender grey; lower parts dark sooty brown; forehead and crown dull greyish white inclined to a silvery white. *Young:* Similar but browner. Length about 13.00, wing 8.75–9.00, tail 5.25, tarsus .80, middle toe 1.30, culmen 1.50–1.85 (Laysan specimen with darker lores), depth of bill .32. *Hab.* Hawaiian Islands.

Pl. XVII., 9164, 9165. **9. M. hawaiien'sis** Roths. **Hawaiian Tern, Noi'o.**

Genus **GYGIS** (Ji'jis) Wagler.

Middle toe and claw shorter than the exposed culmen; bill black, stout at the base and sharply pointed; pure white except a narrow ring about the eye which is black; toes slender, middle toe abnormally long, webs deeply excised (stouter, tail more pointed); shafts usually brownish. *Young* like above. Length 12.00–13.00, depth of bill .40, wing 9.50, tail 4.25–5.00, tarsus .45–.50, middle toe with claw 1.10, culmen 1.80. *Hab.* Central Pacific generally. Laysan, etc.

Pl. XVII., 7892. **10. G. alba kittlitz'i** Hart. **White Tern.**

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[7] A specimen of *stolidus* in the Museum series (Coll. No. 1309), which varies somewhat from the typical form, is minutely described by Mr. Seale in his "Field Notes on the Birds of Oahu, H. I.," *Occasional Papers of the B. P. Bishop Museum*, Vol. I., No. 2. p. 35.

Order TUBINARES.—Tube-nosed Swimmers.

Families.

Nostrils opening from the anterior end of horizontal nasal tubes.

a. Tubes widely separated by the intervening culmen; wings narrow and long; birds of large dimensions.............................(Page 10.) **Diomedeidæ.**

aa. Both nasal tubes united; no intervening culmen; birds of medium or small size....................................(Page 10.) **Procellariidæ.**

FAMILY **DIOMEDEIDÆ.**—ALBATROSSES.

Genus.

Sides of the lower mandible without sulcus (a longitudinal groove); tail short and rounded and not more than one-third the length of the wing; *base of upper division of the bill wide and closely joined by the lateral division*......(Page 10.) **Diomed'ea.**

GENUS **DIOMEDEA** LINNÆUS.

Culmen slightly concave; bill somewhat compressed. Lateral division of the bill narrower at the base than in the middle. (Sub-genus *Phœbastria*, Reich.)

a. Abdomen sooty brown (wings never more than 21.00, smaller and bill more slender); dark sooty brown above; bill dark brown; under wing coverts and auxiliaries sooty brown; sexes similar. *Young:* Similar to adult, but with sides of head white; upper tail coverts whitish. Length about 29.00–36.00 (33.00), wing 19.50, tail 5.60, bill 4.00, tarsus 3.40, toe 4.90. *Hab.* North Pacific Ocean. Laysan, etc.

Pl. XVIII., 8742. **11. D. nigripes** AND. **Black-footed Albatross.**

aa. Abdomen white (bill rather slender); upper tail coverts white; under wing coverts blackish brown and white mixed; wings and back blackish brown; tail brown. *Female* similar. *Young* similar to adult. Length about 32.00, wing 19.00, tail 6.00, culmen 4.50, tarsus 3.60, toe 4.75. *Hab.* Gardner, Lisianski and Laysan.

Pl. XVIII., 8746. **12. D. immutab'ilis** ROTHS. **Gooney.**

FAMILY **PROCELLARIIDÆ.**—PETRELS.

Genera.

Common characters as above (with thirteen or more secondaries); bill shorter than tarsus; tail feathers 12 to 14 in number.

a. Of medium or small size (wing less than 15.00); *wing more than 7.00;* culmen more than half as long as the middle toe and claw. (Sub-family *Fulmarinæ.*)

b. *Partition between the nostrils very thin*, *i. e.*, narrower than the width of a single nostril and within the nasal tube; *depth of the bill at the shallowest part more than one-fourth the length of the lower mandible measured along the side;* tarsus not compressed.

c. *Wing more than twice the length of the tail;* tail moderate, rounded (12 feathers); nasal tubes directed straight forward (claw of hallux small, .10); nail of lower mandible making up more than one-third the length of the mandible measured along the side. Plumage and size differing among species . . (Page 11.) **Æstrela′ta.**

cc. *Wing less than twice the length of the tail;* tail of 12 feathers long and cuneate, being graduated for a third of its length; nail of the lower mandible making up less than a third of the length of the mandible measured along the side; plumage dark; nasal tubes fleshy at ends and directed forward and upward . . (Page 12.) **Bulwer′ia.**

bb. *Partition between the nostrils thick*, *i. e.*, thicker than the outer edge of one of the nostrils; the partition scarcely, if any, shorter than the outer edges of the tubes; tarsus compressed and with a ridge on the front edge; space between the end of the nasal tubes and the base of the unguis (nail on the tip of upper mandible) more than the length of the latter (nostrils at least partially visible from above; wings less than 15.00).

d. *Nostrils elevated above the line of the culmen* when viewed from the side; nasal tubes elevated and inflated anteriorly; under wing coverts dusky; breast white . . . . (Page 12.) **Prio′finus.**

dd. *Nostrils not noticeably elevated above the line of the culmen* when viewed from the side; compressed anteriorly and narrower than at the base; edge of nostrils entirely visible from above (under wing coverts white or else lower parts dusky) . . . . (Page 13.) **Puff′inus.**

aa. *Wing less than 7.00;* tarsus not perceptibly longer than middle toe and claw; *tail forked*, or at least emarginate . . . . (Page 13.) **Oceano′droma.**

GENUS **ÆSTRELATA** BONAPARTE.

Exposed portion of inner web of primaries beneath dark; bill wide at the gape; under parts mostly white; crown and back of the head dark; upper tail coverts uniform with the back; tail dusky (outer feathers sometimes mottled with white); *auxilliaries and under wing coverts mostly white inwardly*, *margined with dark.*

a. *Larger and darker above;* under tail coverts greyish dusky, very abruptly white beneath the surface; upper parts, including hind neck and upper tail coverts, uniform brownish slate, darker on the wings and tail, and nearly black on the head; the feathers of the hind neck and upper tail coverts (the latter very abruptly) white beneath the surface; forehead, lores, cheeks and entire lower parts white; the sides and longer tail coverts sometimes barred with dusky; wing 11.80–12.00, tail 5.50–5.75

(graduated for about 2.40), culmen 1.22, tarsus 1.40, middle toe with claw 1.78. *Hab.* Middle Pacific from Hawaiian Islands to Galapagos (Ridgway). (No specimen in Museum.)

13. **Æ. phæopyg'ia** Salv. **Dark-rumped Petrel.**

aa. *Smaller and paler above;* upper tail coverts ashy-grey, much less abruptly white beneath the surface (bill stouter); *larger; under wing coverts mostly dark;* feathers of the back distinctly edged with grey; under parts white, except along the sides of fore breast. *Female* similar. *Young:* Smaller, with the under tail coverts as long as or longer than the tail feathers; upper back and tail coverts much more broadly edged with blue-grey; whole aspect of the back lighter; less blue-grey on the sides of fore breast. Length 11.15–14.00 (12.75), wing 7.40–8.60, tail 3.20–4.70, culmen 1.02–1.10, tarsus 1.10–1.15, middle toe 1.40–1.50, inner toe 1.15–1.20. *Hab.* North Pacific Ocean. Laysan, etc. The following table will show the variation in measurements of young *fledged* birds and adults:—

	Juvenile (June 19).		*Adult (September).*	
	Male.	Female.	Male.	Female.
Length	11.50	11.15	12.50	14.00(?)
Wing	7.50	7.40	8.60	8.75
Tail	3.70	3.20	4.45	4.70
Culmen	1.08	1.02	1.10	1.10
Tarsus	1.15	1.15	1.15	1.15
Middle toe	1.50	1.40	1.40	1.50
Inner toe	1.20	1.15	1.15	1.15

Pl. XIX., 7907, 7908. 14. **Æ. hypoleu'ca** Salv. **Bonin Petrel**

Genus **BULWE'RIA** Bonaparte.

Plumage entirely dusky sooty brown, darker on the upper parts (smaller); under tail coverts falling short of the end of the tail by more than .50; *the greater wing coverts lighter brown on their edges*, forming a quite well defined patch; quills nearly black. *Downy young:* uniform dark sooty brown. Length about 10.00, wing 7.75, tail 4.50, culmen .90, tarsus 1.20. *Hab.* North Pacific Ocean. Laysan, Kauai, French Frigates, Hawaii (Mills).

Pl. XIX., 8768. 15. **B. bul'weri** (Jard. & Selby). **Bulwer's Petrel.**

Genus **PRIO'FINUS** Hombr. & Jacq.

Tail long, *cuneate; under surface of body white;* feathers of the head and upper plumage not edged with white; back, greater wing coverts and primaries entirely deep sooty brown with slaty brown beneath; feathers of the back edged with paler brown; sides of the neck greyish, mottled; under tail coverts dusky; auxiliaries dusky. Length ♂ 17.50 ♀ 19.00, wing 11.25–12.00, tail 6.00, culmen 1.50–1.55, tarsus 1.75, middle toe 2.15–2.25. *Hab.* North Pacific Ocean. Laysan, Kauai, etc.

Pl. XIX., 7928. 16. **P. cunea'tus** (Salvin). **Wedge-tailed Shearwater, Unu kane.**

GENUS **PUFF'INUS** BRISSON.

a. Lower parts uniform dusky black (wing never over 10.00); bill deep black; under wing coverts deep sooty black (darker); primaries and tail feathers black. Length about 15.00, wing 9.10, tail 3.75, culmen 2.25, tarsus 1.70, middle toe 2.00. *Hab.* Central Pacific Ocean. French Frigates, Laysan.

Pl. XIX., 7942. **17. P. nativita'tis** STREETS. **Christmas Island Shearwater.**

aa. Lower parts uniform white including auxiliaries and the central under tail coverts; primaries dark beneath; head, neck and back, including wings and tail, a very uniform black; the edge of the feathers sometimes brownish; flanks and outer under tail coverts blackish; border of under wing coverts blackish. Length 14.60, wing 9.25, culmen 1.30, tail 3.45, tarsus 1.80, toe 2.20, depth of bill at base .50. *Hab.* Kauai.

Pl. XIX., 9307. **18. P. new'elli**[8] HENSHAW.

GENUS **OCEANO'DROMA** REICHENBACH.

Plumage sooty black; *upper tail coverts more or less white;* base of all the tail feathers white except the centre pair (tail not deeply forked; longer of the upper tail coverts tipped with black. Length about 8.75, wing 5.90, tail 2.75, tarsus .82, middle toe .95, tibia 1.60, culmen .58.[9] *Hab.* Central Pacific Ocean. Kauai, French Frigates, Niihau(?).

19. O. cryptoleucu'ra.[10] **Hawaiian Storm Petrel, Oeoe.**

Order STEGANOPODES.—Totipalmate Swimmers.

Families.

a. Tail cuneate (or rounded); web between the toes only slightly emarginate; no terminal hook to the bill.[11]

b. Middle tail feathers greatly elongated; whole head feathered; bill conical, compressed and pointed; nostrils plainly visible . . (Page 14.) **Phaëthon'tidæ.**

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[8] The description is taken from a specimen given to the Museum by Mr. Francis Gay, April 17, 1900 (B. P. B. M. No. 9307). During the interval between the writing and the publication of the description Mr. Henshaw has described a specimen taken by Mr. M. Newell (Brother Matthias), which seems to be the same as the Kauai specimen in the Museum. I therefore withdraw my *manuscript* name (with due apology to Mr. Gay) in favor of Mr. Henshaw's *published* name. See Auk (1900), Vol. XVII., p. 246. The locality of Mr. Henshaw's type is at fault. It doubtless is a misprint and should be Waihu Valley, Island of Maui, in the place of "Waihn Valley, Island of Mani."

[9] Female in the collection taken by Mr. A. F. Judd on Kauai during the winter of 1892–93, from which the above measurements were taken.

[10] Dr. Schauinsland, in his list of the birds of Laysan Island, adds *O. fuliginosa* (Gm.) to the Hawaiian fauna. It can be easily distinguished from *O. cryptoleucura* by its larger size (length .10, wing 7.50) and having the upper tail coverts the same color as the back.

[11] Since the preparation of the above I have a list of the birds obtained on Laysan by Dr. Schauinsland, Director Städt. Museum, Bremen, in which he gives *Phalacrocorax plagicus*, Pall. The species may be identified by the following: The upper mandible terminating in a distinct hook; *tarsus longer than the hind toe and claw;* with a small, scarcely noticeable gular sac; bill slender with outline straight; tail much longer than the wing, graduated and composed of twelve feathers; culmen less than 2.50; feathers on the lower jaw projecting forward beyond the anterior angle of the eye; head and neck rich glossy silky violet black; more purplish towards the head, becoming silky dark green on the lower parts. *Breeding plumage:* Neck and rump ornamented with very narrow white feathers. *Young:* Uniform brownish dusky. Length 25.00–29.00, wing 9.50–10.60. *Hab.* Coast of Asia from Kamschatka to South China, from Alaska to South Mexico(?). (Hawaiian Islands, Laysan.—*Dr. Schauinsland.*)

bb. Middle tail feathers not greatly produced; no external nostrils; head partly feathered; bill thick through the base..................(Page 14.) **Sul'idæ.**

aa. Tail deeply forked; webs between the toes deeply emarginate; tarsus very short, not longer than the hind toe and claw; wing and tail exceedingly long.
(Page 15.) **Fregat'idæ.**

FAMILY PHAETHONTIDÆ.—TROPIC BIRDS.

Genus.

Characters the same as for the family...............(Page 14.) **Pha'ëthon.**

GENUS PHA'ETHON LINNÆUS.

Plumage very close and satiny; general color white, usually tinged with pink or salmon color, with some black on the upper parts.

a. *Outer web of primaries white* to the base; elongated tail feathers carmine with black shafts; a black comma-shaped patch on the side of the head, starting at the corner of the mouth and prolonged backward behind the eye; inner secondaries with a black band down the middle; flank feathers with a greyish black shaft stripe; feet black; at the base of toes yellow; bill red. *Female* similar. *Very young* have the whole back, head and wings white barred with black. Length 30.00–36.00, culmen 3.50–3.70, depth of bill .85–1.05, wing 12.50–13.00, tail without middle feathers 5.00, with middle feathers 16.50–20.00, tarsus 1.15–1.20. *Hab.* Central Pacific and Indian Ocean. Laysan, etc.
Pl. XX., 8554, 9715. **20. P. rubricaud'a** BODD. **Red-tailed Tropic Bird.**

aa. *Outer primaries with the outer web black* for the greater portion of its length; elongated tail feathers white or apricot color; black on outer web of first primary falling short of the tip by an inch or more; basal two-thirds of both mandibles more or less blackish horn color; black on the side of the head much as in *P. rubricauda;* a black band along the wing formed by the black tips of the median wing coverts; innermost secondaries and scapulars with a very broad oblique black band; shaft of long tail-feather black above, white below. Length 23.00–28.00, wing 10.50–11.00, culmen 2.00, depth of bill .70, tarsus .75, middle toe 1.40, tail without plume 4.50, tail with long feathers 16.50–18.00. *Hab.* Inter-tropical seas. Hawaiian Islands.
Pl. XX., 9895, 9896, 7599. **21. P. leptu'rus** LACEP. & DAUN. **White-tailed Tropic Bird.**

FAMILY SULIDÆ.—GANNETS.

Genus.

Characters the same as for the family....................(Page 14.) **Sula.**

GENUS SULA BRISSON.

Bill sub-cylindrical and tapering to a point, the extremity of which is slightly curved; *whole of lower jaw together with the throat and chin naked. Young:* Upper parts unicolor. (Sub-genus *Sula.*)

a. *Plumage of the head and neck, as well as most all of the upper parts, pure white.*

b. *Greater part of tail feathers brownish black;* naked skin of the face and throat blackish (blueish in life); neck and body entirely white; primaries, secondaries together with most of the tail, brownish black; wing coverts white. *Young:* Head, neck and upper parts plain dark brown; part of the neck streaked with white. *Nestlings* covered with white down. Length 25.00–29.00, wing 15.00–17.00, tail 8.25–10.00, culmen 3.60–4.25, depth of bill 1.40–1.60, tarsus 2.25, middle toe 3.25. *Hab.* Central Pacific Ocean. Laysan, French Frigates, Midway, etc.

Pl. XXI., 7933. **22. S. cy'anops** SUND. **Blue-faced Booby.**

bb. *Tail pure white;* outer web of primary feathers hoary grey; outer webs of secondaries and their coverts hoary; smaller wing coverts white like the rest of the body; all more or less rich white and tinged with buff; feet reddish. *Young:* Above sooty brown, hind neck and lower parts light smoky grey (plumage extremely variable). Length 23.00–27.00, wing 15.00, tail 6.75–7.25, culmen 3.40–3.50, depth of bill 1.40. *Hab.* Inter-tropical seas. Niihau, Oahu, Lisianski, Laysan, French Frigates, etc.

Pl. XXI., 7933. **23. S. pisca'tor** (LINN.). **Red-footed Booby.**

aa. *Plumage of the upper parts uniform deep sooty brown;* head, neck and chest deep sooty brown like the back; lower parts white; tail and wings uniform with the back. *Young:* Nearly uniform sooty brown, paler beneath. Length 30.00–31.00, wing 15.50, tail 7.50, tarsus 1.80, culmen 4.00 (4.25 ♀). *Hab.* Tropical seas. Niihau, Laysan, etc.

Pl. XXI., 8752. **24. S. sula** LINN. **Booby.**

FAMILY **FREGATIDÆ.**—MAN-O'-WAR BIRD.

Genus.

Characters for the genus same as for the family.......(Page 15.) **Frega'ta.**

GENUS **FREGATA** CUVIER.

Culmen more than 4.25; bill long and strongly hooked at the extremity, both mandibles being curved downward. *Male:* Breast and sides sooty black and culmen strong; feathers of the head, back and scapulars elongated, pointed, and a glossy oil-green with a bronze sheen (no white on the flanks); gular pouch scarlet orange (fading). *Female:* Breast and sides white; culmen longer (5.00); head and neck not so glossy; back of the neck, lesser and median wing coverts brown with paler margins. *Young, both sexes:* Head and neck as well as upper half of chest white with an occasional rusty feather about head and sides; upper breast dark sooty brown; otherwise as in the female. Length 37.50–41.00, wing 23.00–25.00, tail 15.00, tarsus .65. *Hab.* Tropical and sub-tropical seas. Hawaiian Islands.

25. F. a'quila LINN. **Man-o'-war Bird, Iwa.**

Order ANSERES.—Lamellirostral Swimmers.

Family.

Only one family. Characters same as for the order....(Page 16.) **Anatidæ.**

FAMILY ANATIDÆ.—DUCKS, GEESE, ETC.

Genera.

a. Tarsus shorter than middle toe with claw.

b. No trace of teeth (lamellæ) along the side of lower mandible; distinct tooth serrations along the upper edge (Sub-family *Merginæ*); culmen shorter than tarsus; bill narrow and peculiar........................(Page 17.) **Mergan'ser.**

bb. A very distinct row of teeth along the side of the lower mandible, in addition to the series along the upper edge. (Sub-family *Anatinæ.*)

c. *Hind toe narrowly lobed;* neck shorter than the body; a colored speculum on the wing.

d. *Bill not spatulate* (upper wing coverts not blue, more usually dark grey;) tail feathers rather narrow and pointed at the tips.

e. *Tail moderate* with the centre pair of feathers not very long and tail graduated for less than one-third its total length; bill rather broad and about the length of the head.................................(Page 17.) **Anas.**

ee. *Tail long*, with the central pair of feathers very long and pointed; culmen longer than the middle toe (speculum broader than the light band at the tip of the secondaries).................................(Page 18.) **Da'fila.**

dd. Bill spatulate, *i. e.*, broad at the end and narrower at the base; upper wing coverts blue (no soft membrane on the sides of the bill towards the tip).

(Page 18.) **Spat'ula.**

cc. *Hind toe with a broad membranous lobe* (Sub-family *Fuligulinæ*); feathers on the lores not reaching beyond posterior border of nostrils; graduation of the tail much more than the length of the bill from the nostrils; distance from anterior end of nostrils to tip of bill much greater than the same place to loral feathers.

(Page 18.) **Charitonet'ta.**

aa. Tarsus equal to or longer than the middle toe without the claw; neck moderately long, no cere on the bill. (Sub-family *Anserinæ.*)

f. *Serrations on the cutting edge of upper mandible visible from the outside* for the greater portion of the length of the tomium; bill very stout, its depth through the base more than equal to the length of the culmen; color of adult either white or bluish with black primaries.....................(Page 19.) **Chen.**

ff. *Serrations on the cutting edge of upper mandible not visible from the outside*, except at the base; tomium almost straight; bill moderate but strong.

g. *Web of feet not deeply excised, i. e.*, cut away from back along both sides of the middle toe..................(Page 19.) **Branta.**

gg. Web of the feet deeply excised.
(Page 19.) **Nes'ochen.**

Genus **MERGANSER** Brisson.

Distance between nostrils and nearest feathers on the sides of upper mandible decidedly less than the depth of the upper mandible at base; feathering on sides of base of upper mandible projecting far forward, forming a very decided though obtuse angle. *Adult male:* Head dull greenish black, the occiput with a long pointed crest; neck and sides of chest dull brownish buff or light cinnamon streaked with black; other lower parts mainly white, usually tinged with cream color (Ridgway). *Female:* Head and neck reddish brown, darkest on the crown; back scapulars and small wing coverts umber brown; edge of the feathers paler; a white patch on the wing; under parts white. Length 20.00–25.00, wing 8.60–9.00, culmen about 2.50, tarsus 1.80–1.90, middle toe 2.40. *Hab.* Northern portion of northern hemisphere, breeds northward. Hawaii,[12] Oahu.

26. M. serra'tor (Linn.). **Red-breasted Merganser.**

Genus **A'NAS** Linnæus.

Culmen shorter than the middle toe; central tail feathers but slightly curled, some specimens not at all.

a. *No white ring around the eye;*[13] speculum greenish blue; under tail coverts in fully fledged male(?) more or less blackish, edged and mixed with chestnut; rump blackish, with varying amount of chestnut; abdomen with pale greyish chestnut ground streaked and spotted with blackish; neck and breast of the same chestnut as the under tail coverts, with oval blackish centres to the feathers of the chest, which become mere streaks on the neck, most numerous on the chin (one specimen with less black on the chin); lesser wing coverts dark grey, with some paler edges; under wing coverts white; feet orange; speculum edged with a band of black followed by a white one (variable in width in front), behind by a black band followed by a white one equal to or wider than the black. *Female* similar. Length ♂ about 18.50 (Seale), wing 9.10–9.50, tail 3.50, culmen 1.80, tarsus 1.35, middle toe 2.10, depth of bill .68–.70; ♀ wing 8.50, tail 3.60, bill 1.80, tarsus 1.38, toe 2.00. *Hab.* Hawaiian Islands.

Pl. XXII., 9168, 9424. **27. A. wyvillia'na** Scl. **Hawaiian Duck, Koloa maoli.**

aa. *Ring of white feathers about the eye;* centre pair of tail feathers but little curled at the tips. *Male:* General color of plumage rufescent; head and nape with a greenish lustre, especially on the nape; throat mixed with a few white feathers; back, fore neck, breast and flanks with dark rufescent markings. *Female:* Similar, but differs in having more white on the chin; the upper throat much duller; some of the upper and under tail coverts paler rufescent with dusky marks or bands; speculum blackish in female. Length ♂ 16.00–16.50, wing 7.10–8.00, tail 3.30–3.50, tarsus 1.25–1.55, culmen 1.38–1.50, toe 1.80–2.00. *Hab.* Laysan Island.

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[12] Mr. Henshaw reports the taking of two specimens near Hilo, November 1899. See Auk, Vol. XVIII., p. 203. I am also informed that it has been taken on Oahu.

[13] Dr. Schauinsland's list adds *A. boscas*, Linn., from Laysan. It is distinguished from other Hawaiian ducks by having no white ring about the eye, and with the speculum greenish blue. Length 24.00. It is hardly possible that the Doctor has confused this with the much smaller form which is indigenous to Laysan.

Pl. XXII., 8745. **28. A. laysanen'sis**[14] ROTHS. **Laysan Teal.**

GENUS **SPAT'ULA** BOIE.

Longer scapulars with a white band along the centre part; abdomen deep chestnut; head and upper portion of the neck deep glossy green; lower neck, breast and outer scapulars white; rump and upper tail coverts dark glossy green with pale edges; *upper wing coverts and outer edge of the two longest scapulars pale blue. Female:* General color of upper parts brown, each feather edged with a broad reddish margin; throat reddish and unspotted. *Young* similar to adult female. Length 17.00–21.00, wing 9.00–10.00, culmen 2.60–2.90, width of bill at end 1.10–1.20, at base .60, tarsus 1.40–1.50. *Hab.* Northern hemisphere. Hawaiian Islands. (No specimen in Museum.)

29. S. clypea'ta (LINN.). **Shoveller.**

GENUS **DAF'ILA** STEPHENS.

Tail feathers not barred across; centre tail feathers blackish, lateral ones grey with pale whitish margins; *head dark, hair brown;* a narrow band at the tip of the last row of wing coverts cinnamon (larger, culmen 1.85–2.25); anterior part of the sides of neck, breast and abdomen greyish white; the breast with very narrow, brown, zigzag bars; head and upper neck hair brown, with a faint gloss on the sides of the occiput. *Male:* Length 26.50–30.00, wing 11.10, tail 7.50–9.50, culmen 2.08, tarsus 1.80. *Female:* Smaller; tail feathers blackish, barred irregularly across with whitish or ochraceous; above greyish dusky varied with irregular bars of yellowish white or pale ochraceous, each feather, except on throat, streaked with blackish. Male in first breeding plumage has pale margin to the wing coverts, and most of the feathers of the rump are broadly barred. *Young male* similar to adult female. *Hab.* Northern hemisphere southward. Hawaiian Islands.

30. D. acu'ta LINN. **Pintail, Koloa mapu.**

GENUS **CHARITONET'TA** STEJNEGER.

Head and upper half of the neck rich metallic green with a purplish gloss on the crown; with a patch of white extending from behind the eye across the occiput; lower neck, lower parts, secondaries and scapulars white; back and upper parts black. *Female:* Head and neck brown with faint gloss, a white patch on cheeks and ear coverts; upper parts blackish brown, darkest on rump; under parts white tinged more or less with brownish grey. Length about 12.50, wing 6.25, tail 2.45, culmen 1.15, tarsus 1.12, toe 2.00, depth of bill .60. *Hab.* North America. Maui.[15]

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[14] Dr. Schauinsland's list gives *Nettion crecca*, Linn., *Querquedula circia*, *Clangula albeola*, Linn., and *Mareca americana* (Gmel.), from Laysan Island. These references are interesting additions to the Hawaiian birds, and are of value in the study of distribution.

31. C. albe'ola (Linn.). **Buffle-head.**

Genus **CHEN** (Ken) Boie.

Adult with the whole head and at least part of the neck white as well as the remainder of the plumage, except the primaries and their coverts; bill a deep purplish (in life) with a white nail; primaries black. *Young:* Head, neck and upper parts pale greyish, the feathers of the latter with whitish edges, and striped medianally with darker, especially wing coverts and tertiaries; rump, tail coverts, tail and lower parts plain white. Length 23.00–28.00, wing 14.50–17.00 (16.36), culmen 2.55–2.70, tarsus 2.80–3.25 (3.01), middle toe 2.00–2.50 (2.34). *Hab.* Western America, breeding in Alaska, migrating south. Hawaiian Islands. (No specimen in the Museum.)

32. C. hyperborē'us[16] (Pall.). **Lesser Snow Goose.**

Genus **BRANTA** Scopoli.

Bill and feet entirely black at all ages; tail coverts white; tail and quills uniform black; upper parts brownish, the feathers with lighter tips.

a. *Head partly white*, a white triangular patch on the cheek usually meeting on the throat; lower parts deep brownish or brownish grey (often not much paler than the upper parts) abruptly defined against the white of anal region; (*smaller size, wing less than 16.00, culmen less than 1.25;*) tail feathers usually 14 to 16 in number. Length 23.00–25.00, wing 13.60–14.00, culmen .95–1.15, tarsus 2.40–2.75. *Hab.* Pacific coast of North America, breeding at Norton Sound, south in winter. Hawaiian Islands.[17]

33. B. canaden'sis minima Ridgw. **Cackling Goose.**

aa. *Head entirely black; middle of the neck encircled by a broad white collar*, interrupted only behind; no chestnut on the breast; upper tail coverts very long; upper parts nearly uniform dark sooty brown; lower parts dark sooty slate, not distinctly if at all contrasted with black of chest, but abruptly defined against white of anal region. *Young:* Similar to adult but collar indistinct or obsolete; the larger wing coverts broadly tipped with white. Length 22.00–29.00, wing 12.70–13.50, culmen 1.20–1.35, tarsus 2.20–2.50. *Hab.* Western Arctic America, south in winter along the western Pacific coast. Maui.[18]

34. B. nigricans (Lawr.). **Black Brant.**

Genus **NES'OCHEN** Salvad.

Head and throat black, which color extends a little below the eye and down the neck; side of neck tawny buff, becoming lighter towards the lower parts; upper surface dull dark umber, the feathers edged or barred with whitish; rump dusky black; abdomen and under tail coverts white. *Female:* Black extends farther down on the side of the head and neck; bill and feet black. Length about 23.00, wing 15.00, bill 1.75, tarsus 3.00, toe 3.25, tail 6.75. *Hab.* Hawaii.

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[15] The specimen from which the above is taken is one in the St. Louis College cabinet. Brother Alfred, the curator, informs me it was taken on Maui by Brother Matthias during his sojourn there.

[16] Hon. Walter Rothschild (through Palmer) *in litt.*; also adds *Anser albifrons gambeli* (Hartl.) from Hawaii.

[17] Hon. Walter Rothschild, *in litt.* Kauai.

[18] Specimen in St. Louis College cabinet taken on Maui by Brother Matthias; also Hon. Walter Rothschild, *in litt.*

35. N. sandvicen'sis (VIG.). **Hawaiian Goose, Nene.**

Order HERODIONES.—Herons, Ibises, Etc.

Families.

a. *Bill much curved*, long and with nasal groove, linear and produced almost to the tip of the bill. (Sub-order *Ibides.*) Bill almost cylindrical, slender and narrower than deep towards the tip, and curved downward for nearly the whole length. (Page 20.) **Ibid'idæ.**

aa. *Bill practically straight;* sides of upper mandible without any groove; hind toe inserted on a level with the anterior ones; the middle toe with its claw pectinate (toothed) on the inner edge (Sub-order *Herodii*); bill lance-shaped or compressed and pointed.... ... .(Page 21.) **Arde'idæ.**

FAMILY **IBID'IDÆ.**—IBISES.

Genus.

Anterior aspect of the tarsus plated; head never more than moderately crested and not very noticeable; chin, lores and base of cheeks bare, but the latter feathered to beyond the anterior line of the eye; claw of the middle toe nearly straight. Head of the adult wholly feathered except lores.. ....(Page 20.) **Pleg'adis.**

GENUS **PLEG'ADIS** KAUP.

Adult with head, neck and lower portions uniformly chestnut; upper parts metallic green bronze and purple, most brilliant on upper surface of wings and tail; *lores lake-red in life;* turning brown in skin, or somewhat reddish brown; *feathers surrounding the base of the bill white. Young:* With lower parts greyish brown. Length about 19.00–26.00, wing 9.30–10.80, culmen 3.75–6.00, tarsus 3.00–4.40, middle toe 2.10–2.85. *Hab.* Tropical America in general, west coast from Lower California to Oregon. Hawaiian Islands.[19] (No specimen in Museum.)

36. P. guarauna (LINN.). **White-faced Glossy Ibis.**

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[19] Professor Brigham informs me that specimen "found on Molokai, which the natives said was a 'malihini' or stranger, and portions of which were placed in the collection of the society...." (Dole, Hawaiian Annual, 1879, p. 41) was one taken by himself from a flock of five during September or October, 1865. The "fragments" were subsequently sent to Professor Baird at the Smithsonian Institution, Washington, D. C., and have since been lost track of. Professor Brigham has since satisfied himself that the specimen was *Plegadis.* This record, taken in connection with the immature bird collected by Mr. Knudsen on Kauai in 1872, seems to confirm Mr. Ridgway's belief that *P. guarauna* is an accidental visitor to the islands from the west coast of America.

FAMILY **ARDE′IDÆ**.—HERONS.

Genera.

With the tail composed of 12 feathers; claws rather short and strongly curved (tail feathers stiffer than the coverts); (Sub-family *Ardei′næ;*) bill only moderate, never equal to the length of the middle toe and tarsus combined; bill without distinct serrations on the upper mandible; upper mandible with notch near the tip.

a. *Culmen longer than the tarsus*, the latter longer than the middle toe. (Page 21.) **Demiegret′ta.**

aa. *Culmen shorter than middle toe and about equal to tarsus;* plumage of young and old very different; bill thick, *i. e.*, culmen rarely more than four times as long as the depth of bill at base.............................(Page 21.) **Nycti′corax.**

GENUS **DEMIEGRETTA** BLYTH.

General color above and below deep blackest slate, the feathers almost black; feathers of the upper breast elongated like those of the middle back, both paler slaty grey; abdomen and vent feathers tinged with ashy white; a pure white streak down the centre of the throat. *Female* similar. *Young:* Paler and more sooty brown. *White form:* Exactly similar to the grey form, only white. *Hab.* Malay Peninsular and islands to Australia, Islands of the Pacific, Fiji, Samoa, etc., north to bay of Corea. Hawaiian Islands(?).[20]

37. **D. sacra** (GMEL.). **Sacred Heron.**

GENUS **NYCTI′CORAX** STEPHENS.

Prevailing color, bluish grey in adult, brownish and striped longitudinally with white in the young; gonys nearly straight; culmen and tarsus about equal (Sub-genus *Nycticorax*); base of forehead and eyebrow white; no chestnut on the back and tail; no white on the back; under tail coverts white, as well as the under sides of the body, with a delicate shade of grey, especially on the neck and chest; back and crown glossy black green; wings dove color; head with two or three long slender white plumes, in the breeding plumage. *Female:* Similar to adult male both summer and winter. *Young:* Light brown above, tinged with cinnamon, most marked on the wing quills; each feather of the body with a white tear-shaped shaft stripe; quills with small white tips; sides of head and neck and entire lower parts striped white and greyish brown; throat whitish. Length 23.00–26.00 (25.00), wing 11.60–12.50, tail 4.10–4.75, culmen 2.70–3.35, tarsus 2.72–3.05, middle toe 3.10–3.45, depth of beak .85–.95. *Hab.* Wide-ranging form in suitable localities, North America southwards. Hawaiian Islands. The following table of measurements are from specimens in the Museum:

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[20] The reference which President Dole makes (Hawaiian Annual, 187 , p. 52) to this species is the only account of its ever being seen in the Islands. Since he speaks of it as "common all over the group," and "when in full plumage the long feathers of the crest and back are blackish purple, and from the back of the head three long feathers of the purest white hang," etc., it is quite probable that the bird described is the common *Auku*.

	Males.				*Females.*		
	Adult.	Adult.	Juvenile.		Adult.	Adult.	Juvenile.
Wing	12.50	12.10	11.60	....	12.50	12.00	11.50
Tail	4.60	4.70	4.50	....	4.10	4.75	4.50
Culmen	3.25	3.30	3.10	....	3.35	3.00	2.70
Tarsus	2.95	3.05	2.85	....	3.05	3.00	2.72
Middle toe	3.45	3.45	3.20	....	3.40	3.40	....
Depth of bill	.85	.95	.85	....	.80	.95	.82

38. N. nycticorax nævius[21] (Bodd.). **Black-crowned Night Heron, Auku kohili.** Pl. XXIII., 5584, 9170.

Order PALUDICOLÆ.—Rails, Coots, Etc.

Family.

First primary longer than the seventh; wings less than 10 inches (except in *Porphyrio*); toes very long and slender, with "scallops" along the side in *Fulica;* tail usually quite rudimentary................................(Page 22.) **Rallidæ.**

Family RALLIDÆ.—Rails, Gallinules and Coots.

Genera.

a. No enlarged shield-like process extending over the front part of the head; (Sub-family *Rallinæ;*) middle toe and claw exceeding the length of the tarsus; secondaries practically equal to the primaries in length, or falling short of them by less than the length of the hind toe and claw.

b. Tail feathers very soft and entirely hidden at the ends by the coverts (Hawaii)............ ....(Page 23.) **Pen'nula.**

bb. Tail feathers not decomposed but ordinary and evident with no white secondary quills, the inner toe without the claw longer than the culmen; plumage variegated; wings feebly developed and not as long as the tarsus and toes combined. (Page 23.) **Porzan'ula.**

aa. An enlarged frontal shield.

c. Toes without lobes or flaps. (Sub-family *Gallinulinæ.*)

d. Nostrils oval, in a distinct nasal depression; frontal shield rounded; wings nearly three times the length of the tarsus..(Page 23.) **Gallin'ula.**

dd. Nostrils rounded; no nasal depression; plumage blue (wing coverts ordinary); primaries much longer than secondaries..(Page 24.) **Porphy'rio.**

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[21] The Hawaiian *Auku* seems not to differ from the American sub-species by any constant character.

cc. Toes provided with conspicuous lateral lobes or flaps; primaries about equal to secondaries. (Sub-family *Fulicinæ.*)..........(Page 24.) **Ful'ica.**

Genus **PEN'NULA** Dole.

General color above dark ruddy brown with darker centres to the feathers, producing a somewhat mottled appearance; wing coverts like the back and very much elongated; quills blackish with rusty brown outer edges; tail feathers blackish, completely hidden by the feathers of the rump; head more uniform brown with a ruddy tinge; sides of the face like the top of the head; throat and under surface of the body dark vinaceous ruddy, a trifle paler shade on the throat. (Measurements from the two mounted specimens in the Museum from Mills collection.) Length about 5.50, wing 2.70 do., tail .75 do., tarsus 1.00, 108, toe (?) .85, culmen .75–.76, depth of bill .30 do.[22] *Hab.* The uplands of Hawaii; rare or extinct.

39. P. ecauda'ta[23] King. **Sandwich Rail, Moho.**

Genus **PORZAN'ULA** Frohawk.

Upper parts generally sandy brown with black centres to the feathers; sometimes white in the centre of the back or rump; wing coverts uniform with the back except for the black streaks; sides of the head, throat and breast dark ashy grey; flanks and under tail coverts sandy brown, like back, with occasional white spots; under wing coverts sandy buff; wing and tail feathers brown with sandy margins. Length about 6.00, wing 2.18–2.25, tail 1.00–1.10, culmen .65–.80, middle toe 1.10–1.30. *Hab.* Laysan.

Pl. XXIV., 7911, 7912. **40. P. palm'eri** Froh. **Laysan Rail.**

Genus **GALLIN'ULA** Brisson.

Uniform plumbeous, sides of body streaked with white; base of lower mandible red vermilion like shield; bill tipped with greenish yellow. *Male:* General color of the back dark olive brown reflecting ruddy brown; head and neck blackish fading into slate-grey on the upper neck and under parts. *Winter adult:* Similar, but frontal shield smaller. *Young:* Sooty black more or less mixed with white below. Adults in the autumn and winter have white on the abdomen and under wing coverts. Length about 14.00, wing 6.75, tail 1.50, culmen and shield 2.00, tarsus 2.25–2.50, toe 3.00, hind toe 1.25. *Hab.* Hawaiian Islands.

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[22] Mr. Wilson, doubtless in error, gives total length about 13.00, wing 6.00, tarsus 3.25, middle toe with claw just under 3.00, culmen .75.

[23] Mr. Scott B. Wilson, in discussing the genus Pennula (Aves Hawaiiensis, p. 171–178) finds grounds for the making of three species—two species in addition to the typical *P. ecaudata.* His description of *P. sandvicensis* (Gmel.) is based on the drawing executed by Mr. W. W. Ellis in 1779, to which Mr. Wilson appends Latham's description which is as follows: "Size small; bill dusky ash color; general color of the plumage pale ferruginous; the feathers on the upper parts darkest in the middle; tail short, hid by the upper coverts; legs dusky flesh color. Inhabits *Sandwich Isles.* Was also found on the island of *Tanna;* but the plumage is darker on the upper parts and the bill and legs yellowish.—Sir Joseph Banks." The Ellis drawing is only the crudest suggestion of the general form of a *Pennula*, while Latham's description is very meagre; and since there seems not to be a single example in any museum, and "no example of the Sandwich Rail has been met with within human memory," it is quite possible that the drawings and description could have emanated from, and therefore should be referred to, the well known extinct and exceedingly rare *ecaudata* of King (1785). *Pennula wilsoni* is based "on the so-called 'Sandwich Rail' in the Leiden Museum." The original description by Dr. O. Finsch is here appended. "Schlegel's type in the Leiden Museum: Upper parts dark ruddy brown with blackish centres to the feathers of the back and wings, producing on these parts well marked longitudinal stripes; head and neck somewhat lighter and uniform ruddy brown like the sides of the head and neck; under parts uniform rusty brown shading into vinous red, a little darker on the flanks; middle of chin somewhat lighter; anal region and lower tail coverts dark vinous red forming a well marked darker patch; primaries blackish very narrowly margined with brown on the outer webs; broad and lax upper tail coverts with very narrow light rusty brown apical margins, showing as lighter undulations; bill and feet light horny brown (as far as can be judged greenish in life). *Sex and habitat* unknown." Measurements (*l. c.* Finsch): Total length 150 mm., wing 73 mm., culmen 19 mm., tarsus 30 mm., tibia 7 mm., middle toe and claw 35 mm.

Pl. XXIV., 9745. **41. G. sandvicen'sis** Streets. **Hawaiian Gallinule, Alae.**

Genus **PORPHY'RIO** Brisson.

Thighs purplish brown; inner secondaries black (with no distinct patch of blue on the throat); under surface uniform bluish except the under tail coverts which are white; general color of back black; primaries black; frontal plate, bill, legs and feet red. Length 17.25, wing 14.50, tail 4.00, culmen and shield 2.70, tarsus 3.35, toe 4.00. *Hab.* Australia, New Zealand, New Guinea. Oahu; introduced.

42. P. melano'tus Newt. **Alae awi.**

Genus **FU'LICA** Linnæus.

General color above and below slaty grey; under tail coverts black, the lateral ones white with the inner half of the feather black; outer secondaries broadly tipped with white, one specimen with under parts suffused with whitish, and flank stripes wanting in all the specimens in the collection; quills blackish brown; back browner. Length 16.25, 15.60, 16.25; wing 7.00, do., do.; tail 2.10, 2.20, 2.30; culmen including shield 2.25, 2.05, 2.10; tarsus 2.25, 2.15, 2.20; toe 3.25, do., do. *Hab.* Hawaiian Islands.

Pl. XXIV., 9432. **43. F. alai** Peale. **Hawaiian Coot,[24] Alae keokeo.**

Order LIMICOLÆ.—Shore Birds.

Families.

a. Naked portion of the thigh much more than the length of the middle toe; tarsus more than twice the length of the middle toe; nasal groove not extending beyond half the length of culmen...................(Page 26.) **Recurviros'tridæ.**

aa. Naked portion of thigh less than the length of middle toe; tarsus less than twice the length of the middle toe.

b. Toes with distinctly scalloped web, and with a serration along the edge of the planta-tarsi as in the grebes..................(Page 25.) **Phalaropo'didæ.**

bb. Toes without scalloped webs and no serrated edge to the planta-tarsi; nasal groove extending along the greater part of the upper mandible.

c. Front of tarsus covered with a continuous row of transverse scutulæ.

d. Bill slender; exposed culmen longer than middle toe without the claw; end of bill with a more or less rounded or sometimes expanded tip.

(Page 26.) **Scolopac'idæ.**

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[24] A partial albino (Museum No. 8708) was collected on Maui by Mr. G. P. Wilder, November 4, 1899.

dd. Bill stout and pointed, culmen arched toward the tip, very pointed and wedge-shaped at the tip; or, exposed culmen equal to or shorter than the middle toe without the claw............................(Page 29.) **Aphriz'idæ.**

cc. Front of tarsus covered with small irregular or hexagonal scales in front and behind, and with the dentrum or end of the upper mandible enlarged; bill shorter than the tarsus..............................(Page 28.) **Charadi'idæ.**

FAMILY **PHALAROPO'DIDÆ.**—PHALAROPES.

Genera.

a. Bill slender, almost cylindrical, not widening towards the end; nostrils separated from the loral feathers by a space equal to the depth of the upper mandible at the base...(Page 25.) **Phalaropus.**

aa. Bill broad, flattened, somewhat widened toward the end; nostrils somewhat separated from the loral feathers by a space less than the depth of the upper mandible at the base....................................(Page 25.) **Crymo'philus.**

GENUS **PHALAR'OPUS** BRISSON.

Web between middle and outer toes extending to or beyond the second joint of the latter; lateral membrane of all the toes distinctly scalloped. (Sub-genus *Phalaropus.*) *Adult female in summer:* Above dark plumbeous, the back striped with ochreous buff; wings dusky, the greater coverts broadly tipped with white; lower parts white; chest and sides of neck rufous. *Adult male in summer:* Similar to the female, but colors duller, the rufous confined to the sides of the neck and less distinct; the chest chiefly mixed with white or greyish. *Winter plumage:* Forehead, supercilliary stripe, sides of head and neck with lower parts generally pure white; top of head greyish; upper parts chiefly greyish; under parts for the most part white. Length 7.00, wing 4.10, tail 1.90, culmen .88, toe .90. *Hab.* Arctic regions; southward in winter. Kauai.

44. P. loba'tus[25] (LINN.). **Northern Phalerope.**

GENUS **CRYMO'PHILUS** VIEILLOT.

Summer female: Fore part of head deep plumbeous black; hind neck plain cinnamon and plumbeous; sides of head white; sides of neck and entire under parts vinous chestnut; general color of back sandy buff, streaked with black centres to the feathers; lesser wing coverts slaty blue with whitish edgings. *Male:* Similar to the female, but less brightly colored; the head sandy brown streaked with blackish like the back; a good deal of white on the under surface of the body and throat. *Male in winter:* Bluish grey above; wings more dusky than in summer, but still retain the white markings; head, neck and lower parts pure white, with the occiput and space about the eye dark plumbeous. *Young:* Top of head, hind neck, back and scapulars dull black, the feathers edged with ochraceous; wing coverts, rump and upper tail coverts plumbeous. Length about 7.75, wing 5.00, tail 2.10, tarsus .80, culmen .80, toe .82. *Hab.* Northern portions of northern hemisphere. Hawaii, Maui.[26]

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[25] The only specimen in the Museum was one shot by Mr. A. F. Judd on Kauai during the winter of 1892-93. This seems to be the first record of *P. lobatus* appearing in Hawaii.

45. Crymo'philus fuleca'rius (LINN.). **Red Phalarope.**

FAMILY **RECURVIROS'TRIDÆ.**—STILTS AND AVOCETS.

Genus.

With the hind toe absent; toes with scarcely any web, and divided to the base; bill nearly straight..................................(Page 26.) **Himan'topus.**

GENUS **HIMAN'TOPUS** BRISSON.

Under surface of the body white; head and neck behind black, with no complete white collar on the latter; forehead white; ear coverts and sides of face black; back of neck and upper parts, including wings, black with a deep gloss; tail light grey tipped with black. Length about 15.00, wing 8.75–9.50, tail 3.25–3.30, culmen 2.80–3.10, tarsus 4.75, middle toe 1.80. *Hab.* Hawaiian Islands.

Pl. XXV., 9429. **46. H. knud'seni** STEJN. **Hawaiian Stilt, Kukuluaeo.**

FAMILY **SCOLOPAC'IDÆ.**—SNIPES, SANDPIPERS, ETC.

Genera.

a. Back of tarsus with continuous row of transverse scutulæ (*i. e.*, square plates); bill straight. Ears situated decidedly posterior to the eye (not underneath it[27]); plumage varying with the seasons. (Sub-family *Tringinæ.*)

b. Hind toe present.

c. No web between the anterior toes; bill but slightly if at all widened at the tip; exposed culmen longer than the middle toe and claw....(Page 27.) **Trin'ga.**

cc. Middle toe united to one or both of the lateral toes by a membrane; tail not more than half as long as the wing.

d. Tail longer than the exposed culmen; wing more than 4.50; axillaries uniform greyish or dusky; no web between the middle and inner toe. (Page 27.) **Heteracti'tis.**

dd. Tail shorter than the exposed culmen; wing more than 7.00; terminal portion of both mandibles smooth and hard..........(Page 27.) **Limo'sa.**

bb. Hind toe absent...........................(Page 28.) **Cal'idris.**

aa. Back of tarsus covered with hexagonal scales. (Sub-family *Numinæ.*) (Page 28.) **Nume'nius.**

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[26] A specimen in fine winter plumage is in the collection made by Brother Matthias, on Maui, which is now in the St. Louis College cabinet, Honolulu. From this specimen the above description and measurements are taken. (See also Henshaw, Auk, XVII., p. 203.) Dr. Schauinsland lists this species from Laysan Island.

[27] Mr. Henshaw adds *Gallinago delicata* (Ord.), from Hawaii.

GENUS **TRINGA** LINNÆUS.

Middle tail feathers longer and more pointed than the rest; tarsus longer than the middle toe and claw; exposed culmen not longer than the tarsus, and less than half as long as the tail (Sub-genus *Acto'dromas*); wing more than 4.50; rump and tail coverts plain brownish black; shaft of all the quills white for a portion of its length. *Adult male:* General color above sandy rufous streaked with black down the centre of the feathers; lesser wing coverts dull brown; primary coverts blackish; crown of head bright sandy rufous streaked with black; lores and a distinct eyebrow white with a narrower streak of blackish; under surface of body white; the chin unspotted; the throat and fore neck tinged with rufous and minutely spotted. *Female* similar. *Winter:* Much browner than the summer plumage without the rufous except on the head *Young:* With more rufous on the upper parts than the old birds. Length 7.75, wing 5.10, tail 2.10, culmen .90, tarsus 1.20, middle toe 1.10. *Hab.* Far north, breeding in Alaska, migrating south. Oahu,[28] Maui, Laysan.

47. **T. acumina'ta**[29] (HORSF.). **Sharp-tailed Sandpiper.**

GENUS **HETERACTI'TIS** STEJNEGER.

General color above uniform ash-greyish with slightly indicated lighter margins; nasal grooves more than half as long as the exposed culmen; lower back, rump and upper tail coverts purer grey; wing coverts like the back; lores blackish. *Winter:* Under surface of the body white with ash-grey shade over the fore neck and chest; sides of flanks and chest also ashy grey. *Female* similar. *Summer:* Above plain brownish gray varied with dusky; lower parts white tinged with grayish on the fore neck; fore neck streaked; rest of lower parts barred with dusky. *Young:* Above brownish grey, the feathers margined with buff or pale ochraceous and finely mottled transversely with greyish. Length 10.50–12.00, wing 6.40–6.75, tail 2.90–3.00, culmen 1.50–1.70, tarsus 1.25–1.32, toes 1.25–1.30. *Hab.* Pacific coast of America, southward, wide-ranging. Hawaiian Islands.

Pl. XXV., 9159. 48. **H. incanus** (GMEL.). **Wandering Tatler, Ulili.**

GENUS **LIMO'SA** BRISSON.

Wing without white patch; with the tail distinctly barred; upper tail coverts white with brownish or dusky markings; under parts, head and neck plain cinnamon color; general color over the back blackish mottled with chestnut red; wing coverts greyish varied with dusky shaft streaks and whitish margins. *Winter:* Head, neck and lower parts whitish, darkest on the chest, streaked with dusky about the head and neck; breast and sides of body with a few shaft streaks and bars of brownish grey.

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[28] The Museum's specimen of *T. acuminata* was taken by Mr. A. F. Judd in Moanalua valley near Honolulu. I have examined a specimen taken on Maui by Brother Matthias which is now in the St. Louis College cabinet. Dr. Schauinsland includes it in his list from Laysan.

[29] *Tringa americana*, Cass., is added by Dr. Schauinsland's list of birds from Laysan; also *T. maculata*, Vieill. from Hawaii (Hensh.).

Female: Similar to male but larger. *Young:* Above, including wing coverts, buffy greyish or dull clay color irregularly varied with dusky; lower parts dull buffy whitish shaded across chest with deeper greyish buff. Length 14.60–16.00, wing 8.25–9.15, culmen 3.17–4.70, tarsus 2.00–2.45, middle toe 1.10–1.33 . . . . *Hab.* Coasts of Eastern Asia and across to Alaska, migrating south in winter to New Zealand and Australia; Lower California, casual in winter (Ridgway). Kauai.[30]

49. L. lappon'ica bau'eri (Naum.). **Pacific Godwit.**

Genus CAL'IDRIS Cuvier.

Winter: General color above light ashy grey with more or less distinct hoary edges to the feathers and blackish shaft stripes; under parts white. *Summer:* Differs from the winter in being mottled and not uniform; greater wing coverts broadly tipped with white; above light rusty, mottled and spotted with blackish on the feathers; head, neck and chest light rusty. *Spring:* Above light greyish coarsely spotted with black, streaks of black on the neck. *Young:* Similar to winter adult but not so uniform above. Only seen in winter plumage in Hawaii(?). Length about 8.00, wing 4.80–4.90, tail 2.25–2.30, tarsus .95, middle toe .73, culmen .90–1.00. *Hab.* Nearly cosmopolitan. Hawaiian Islands.

50. C. arena'ria (Linn.). **Sanderling, Hunakai.**

Genus NUME'NIUS Brisson.

Feathers of the thighs terminating in long bristle-like points; quills with whitish or rufous on the inner edge; a central longitudinal pale band down the crown, with the sides of the crown blackish brown forming a broad band down the sides of the latter; auxilliaries pale cinnamon barred with wide stripes of dark brown; upper parts sooty brown and buff; tail coverts uniform cinnamon buff; lower parts dull buff; cheeks, neck and breast streaked with brown. *Female* similar. Length about 17.00, wing 9.00–9.25, tail 3.75, culmen 2.95–3.25, tarsus 2.15–2.35. *Hab.* Most of the islands of the Pacific. Hawaiian Islands.

Pl. XXV., 9752. **51. N. tahitien'sis** (Gmel.). **Bristle-thighed Curlew, Kioea.**

Family CHARADRI'IDÆ.—Plovers.

Genus.

With no spur and no facial wattles; wing less than 8.00; plumage without metallic tint; head not crested; no hind toe . . . . (Page 28.) **Charad'rius.**

Genus CHARAD'RIUS Linnæus.

No hind toe. *Adult summer:* General color above mottled with black, golden and ashy chin, throat and lower parts dull dusky black; a frontal band and long eyebrow white or buffy white; wing feathers black with white shafts. *Adult winter:* With no black on under parts, which are whitish on the throat and belly and light brownish streaked with grey elsewhere, more streaks on the chest; usually less yellow above than in summer. *Young:* Similar to adults but with more golden above; crown blacker. Length 9.85–10.00, wing 6.35–6.65, tail 2.65–2.90, culmen .85–1.00, tarsus 1.60–1.92 (1.70), toe 1.20–1.32, depth of bill .25. *Hab.* Breeding in Northern Asia and Alaska, southward to Polynesia. Hawaiian Islands. The following table of measurements is taken from specimens in the Museum series:

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[30] The specimen from which the above description was taken is in the possession of Mr. Francis Gay and was secured by him on the Island of Kaua The measurements are, length 17.00, wing 9.00, tail 3.00, culmen 4.10, tarsus 2.25, middle toe 1.50 (?). A fine winter specimen is in St. Louis College cabinet. Dr. Schauinsland also records *Limosa novæ-zealandiæ*, Salv.. from Laysan.

	Male.	Male.	Male.	Male.	Male.	Female.	Female.	Female.
Length	9.90	9.85	10.00	9.75	10.00	10.00	10.00	10.00
Wing	6.65	6.40	6.50	6.55	6.35	6.45	6.75	6.50
Tail..............	2.90	2.80	2.80	2.72	2.80	2.65	2.80	2.75
Culmen	.98	.98	1.00	.90	1.00	.85	.90	.97
Tarsus	1.85	1.92	1.70	1.60	1.70	1.70	1.76	1.75
Toe	1.25	1.30	1.25	1.20	1.32	1.25	1.30	1.25
Depth of bill.......	.25	.26	.25	.25	.26	.25	.26	.26

52. C. domin'icus fulvus[31] (Gmel.). **Pacific Golden Plover, Kolea.**
Pl. XXV., 9397, 9897.

Family APHRIZ'IDÆ.—Surf Birds and Turnstones.

Genus.

Nasal grooves not more than half the length of the upper mandible; tail slightly rounded; terminal half of the bill pointed..................(Page 29.) **Arena'ria.**

Genus ARENA'RIA Brisson.

Head white and streaked with black, or head blackish brown; throat white, followed by a broad black band. *Fall adult male:* General color above black mixed with chestnut or partly chestnut feathers; entire rump pure white; upper tail coverts black, longer ones white; quills black with white shafts; crown of head and hind neck white; lores white; sides of neck, fore neck and breast black; throat white; abdomen white. *Female:* Duller all over and with less chestnut. *Winter:* Above nearly uniform dusky brown, edges of feathers ashy brown; head uniform brown like the back; hind neck and side of neck ashy mottled with dusky centres. *Young:* General color above dusky brown; throat and under surface of body white. Length about 8.00, wing 5.60–5.95, tail 2.40–2.50, culmen .88–.90, tarsus .95–1.05, toe 1.05, depth of beak .30. *Hab.* Cosmopolitan. Hawaiian Islands.

Pl. XXV., 8726, 9174. **53. A. inter'pres**[29] (Linn.). **Turnstone, Akekeke.**

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[31] Mr. Henshaw adds *Squatarola squatarola* (Linn.) from Hawaii. (Auk, XVII., p. 202.

[32] It is probable that *A. interpres* (Linn.) and *A. melanocephala* (Vig.) both visit the islands. However, I have seen no specimens of the latter that have been taken in the group.

Order GALLINÆ.—Gallinaceous Birds.

Families.

Hind toe rather small and short, less than half the length of the outer toe and inserted above the level of the middle toe. (Sub-order *Phasiani.*)

a. Head entirely feathered, tarsus without spur....(Page 30.) **Tetraon'idæ.**
aa. Head partly naked, tarsus with spur.........(Page 30.) **Phasian'idæ.**

FAMILY **TETRAON'IDÆ.**—QUAILS, ETC.

Genus.

Tarsi and nasal fossæ naked; wings less than 6.00 (Sub-family *Perdicinæ*); cutting edge of lower mandible somewhat serrate; first wing quill shorter than the seventh; tail shorter than the wing; wing not more than 5.50; plumage much varied; tail more than two-thirds the length of wing; crest lengthened and distinct from the feathers of the crown.................................(Page 30.) **Lophor'tyx.**

GENUS **LOPHOR'TYX** BONAPARTE.

Crest black; throat uniform black in the adult males; flanks olive brown or greyish streaked with chestnut. *Male:* Belly with black scale-like markings and a central patch of chestnut. *Female:* Prevailing color smoky greyish or brownish. *Young:* Above finely mottled brownish; throat and abdomen dull whitish. Length about 9.50, wing 4.35–4.70, tail 4.10–4.70, tarsus 1.20–1.25. *Hab.* California and Oregon. Hawaiian Islands; introduced.

54. L. californ'ica (SHAW). **California Partridge.**

FAMILY **PHASIAN'IDÆ.**—PHEASANTS.

Genus.

Head feathered except about the eyes; tail lengthened and graduated, the feathers tapering to a point; sexes different. (Sub-family *Phasininæ.*)
(Page 30.) **Phasia'nus.**

GENUS **PHASIA'NUS** LINNÆUS.

a. Under parts fiery copper chestnut. *Male:* A white ring about the middle of the neck; the neck metallic green; the breast with metallic coppery and purple reflections. *Female:* With all the tail feathers barred with blackish and dirty white on a brownish ground. Length 20.00 in the female to 30.00 in the males; wing 8.50–10.50, tail 11.00–20.00. *Hab.* China. Hawaiian Islands; introduced.

55. P. torqua'tus GMEL. **Ring-neck Pheasant.**

aa. Under parts dark green; no white ring about the neck; throat and side of the neck with a purplish gloss; top of the head bronze green; the lower neck and mantle dark green varied with buff lines which follow the shape of the feathers; lesser wing coverts greenish slate; larger wing coverts as well as the lower feathers of the mantle with bright ferric ochraceous markings; rump greenish. *Female:* Feathers of the mantle almost entirely black in the middle, with sometimes a shaft stripe of rufous and green tip to the feathers; feathers to the mantle and nape indistinctly tipped with dark green; under parts light buff; all the feathers of the chest, breast, sides and flanks strongly marked with black. Length 24.00–29.00, wing 8.20–9.65, tail 10.00–14.00, tarsus 2.20–2.70, toe 2.50. *Hab.* Japanese Islands. Oahu; introduced.

56. P. versi'color[33] VIEILL. **Japanese Pheasant.**

Order COLUMBÆ.—Pigeons.

Family.

Tarsus almost as long or longer than the middle toe; tail feathers twelve or more. (Page 31.) **Peristeridæ.**

FAMILY **PERISTER'IDÆ.**—GROUND PIGEONS, ETC.

Genus.

Without metallic spots on the wings; tail rather broad; tarsus naked on the upper parts; neck with a dark collar. (Sub-family *Turturinæ.*) Same characters for the genus...(Page 31.) **Turtur.**

GENUS **TURTUR** SELBY.

Feathers of the hind neck bifurcated (forked at the tip); black with white terminal spots (Sub-genus *Spilopelia*); under tail coverts grey; upper parts, back, rump, etc., light brown edged with lighter brown; top of head blue grey; back of neck vinous; lower parts rich vinous, lightest on the chin and abdomen; outer wing coverts lead-grey; outer pair of tail feathers black tipped with broad white band. *Female* similar. *Young:* Paler and duller all over. Length 12.50–13.00, wing 6.00–6.25, tail 5.00–5.50, tarsus .90–1.00, toe 1.20. *Hab.* China. Hawaiian Islands; introduced.

57. T. chinen'sis (SCOP.). **Chinese Turtle Dove.**

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[33] Hybrids between the two species of pheasants here given frequently occur. The numerous attempts to introduce game birds into the islands have met with varied success, so that "wild" turkey, chickens, guinea fowls, pea fowls, etc., are not infrequently met with.

Order RAPTORES.—Birds of Prey.

Families.

Head entirely feathered; no web between the inner and middle toe; hind toe with large sharp claw.

a. Eyes lateral, not surrounded by disks of radiating feathers; outer toe not reversible. (Sub-order *Falcones.*) ....(Page 32.) **Falcon'idæ.**

aa. Eyes surrounded by disks of radiating feathers; both eyes directed forward; cere concealed by loral and frontal feathers (Sub-order *Striges*); facial disks distinct and extending as far above the eye as below it; inner toe decidedly shorter than the outer one; first quill shorter than the third...............(Page 33.) **Bubon'idæ.**

Family **FALCON'IDÆ.**—Falcons, Hawks, Etc.

Genera.

Nostrils not circular, nor linear and oblique; with the upper end of the nasal opening the anterior one (Sub-family *Accipitrinæ*); tail not forked; front of tarsus covered with large transverse scutulæ; claws grooved beneath; cutting edge of upper mandible not notched; tip of upper mandible produced into a conspicuous hook.

a. Face encircled by a ruff of short stiffened feathers, as in the owls. (Page 32.) **Circus.**

aa. Face not encircled by a ruff; tail not more than two-thirds the length of the wing; primaries exceeding the secondaries by much more than the length of the tarsus in front; wings more than four times as long as the tarsus......(Page 33.) **Buteo.**

Genus **CIRCUS** Lacépède.

Male: Above dull blue-grey, darker and inclined to brownish on the head, back and scapulars; the neck somewhat mottled with buffy white; facial ruff ashy grey; chin whitish; throat, sides of neck and breast dull greyish; rest of under parts white; tail bluish grey; upper tail coverts white. *Female:* Above dusky brown; head and neck streaked; the lesser wing coverts spotted; feathers of rump edged with rusty; facial ruff buffy white streaked with dark brown; tail ashy grey with five bars of dark brown, the interspaces more or less rufous; under surface of body buffy white with broad streaks of brown on the breast, thighs and abdomen. *Young:* Above ashy brown or blackish brown with rufous margins to the feathers; wing coverts spotted with deep rusty; ear coverts uniform bright dark brown; feathers of the disks browner; lower parts rich rusty ochraceous, paler posteriorly. Length 19.50–24.00, wing 12.90–16.00, tail 8.80–10.50, tarsus 2.85–3.25, middle toe 1.20–1.55. *Hab.* Whole of North America, southward; accidental in Hawaiian Islands. (No specimens in the Museum.)

58. C. hudson'ius (Linn.). **Marsh Hawk.**

Genus BUTEO Cuvier.

Upper parts, back, head and upper tail coverts blackish brown; secondaries and wing coverts like the back; all with paler margins, and with some tawny rusty; throat white; sides of breast brown mottled with white; black shafts to all the dark feathers; abdomen, tibia and under tail coverts white with faint brownish markings; quills blackish above; from the notch to the base of inner web white with faint brownish bands varying in size and extent; tail, general color brownish with bands of smoky brown and dull ash-grey. *Female:* Larger and similar (one specimen shows indistinct bands of brownish and tawny on the wing coverts and back). *Young:* Darker above, more rusty edgings to the feathers of the sides and back of the neck; throat with narrow shaft stripes; breast and under parts with more brown than white; thighs brown with rusty; under tail coverts whitish with cross bars of brown slightly edged with ochraceous rusty. Length about 15.50. Measurements taken from three specimens: Wing 9.50, 10.60, 11.75; tail 5.50, 5.60, 6.40; tarsus 2.60, 2.30, 2.60; culmen 1.10, 1.25, 1.30; toe 1.90, 1.75, 2.10. (The last set of measurements are from the female.) *Hab.* Hawaii.

Pl. XXVI., 5521. **59. B. solita'rius**[34] Peale. **Hawaiian Hawk, Io.**

Family BUBONI'DÆ.—Owls.

Genus.

Characters as given for the family........................(Page 33.) **Asio.**

Genus A'SIO Brisson.

Light bands on quills less than ten in number; under surface of quills barred across with brown; tips entirely brown; face more or less fulvescent with brownish black; ear tufts short; ground color varying in individuals from tawny ochraceous to buffy white relieved by dark brown stripes; wings mottled with dusky and ochraceous; tail ochraceous and buffy; outer feathers lighter. *Young:* Above dark sepia brown, the feathers broadly tipped with buff; face uniform brownish black; lower parts wholly plain dull buffy tinged with smoky greyish anteriorly. *Hab.* Hawaiian Islands. The following measurements seem to justify the separation sub-specifically of the Hawaiian form from the larger North American bird:

	Sex.	*Length.*	*Wing.*	*Tail.*	*Tarsus.*	*Toe.*	*Culmen.*
B. P. B. Museum No. 9,835.	♂	13.25	11.15	5.40	1.35	1.60	1.10
No. 10,067.	♀	14.00	11.80	5.50	1.35	1.58	1.12
No. 1,284.	—	14.25	11.20	5.55	1.38	1.55	1.08
No. 9,272.	♂	14.00	11.50	5.45	1.36	1.55	1.10

Pl. XXVI., 9835. **60. A. accipitri'nus sandvicen'sis**[35] (Blox.). **Hawaiian Owl, Pueo.**

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[34] There are some uncertain references to "*Pandion solitarius*" which are with difficulty reconciled with the habits of the species given above. A fish-hawk (*Pandion*) may yet be taken in the group.

[35] To correspond with the form usually adopted *sandwichensis* is changed to *sandvicensis*.

Order PASSERES.—Perching Birds.

Families.

Tarsus compressed behind, forming a comparatively sharp edge, or else hind claw longer than its digit and straight, the enveloping membrane (*i. e.*, tarsal sheath) divided into not more than three longitudinal segments which may be either cut up into transverse segments or fused into continuous plates. (Sub-order *Oscines.*)

a. Posterior half of the tarsus not compressed but rounded and divided into distinct segments like the anterior half. . . . . (Page 35.) **Alau'didæ.**

aa. Posterior half of the tarsus compressed with the lateral plates forming a sharp ridge.

b. No bastard primary (*i. e.*, the first primary obsolete), the outer primary falling short of the wing by less than the length of the hind toe without the claw; bill of various forms but with a well developed operculum; tongue a more or less modified tubular brush. A very heterogeneous family embracing the greater part of the Hawaiian passerine avi-fauna. . . . . (Page 39.) **Drepan'ididæ.**

bb. Tenth or outer primary present, but varying in length.

c. Primaries apparently only nine, the tenth being exceedingly rudimentary; tip of the bill not hooked; bill straight and cone-shaped. Bird sparrow-like.

d. Wing less than 2.40; nostrils placed high on the bill nearer the culmen than the tomium. . . . . (Page 39.) **Ploce'idæ.**

dd. Wing more than 2.48; bill notched and with a few bristles at the gape; true sparrows. . . . . (Page 38.) **Fringill'idæ.**

cc. Primaries obviously ten, or else the bill hooked; tarsus longer than the middle toe with claw.

e. Tarsus more or less distinctly scutulate in front.

f. Tail feathers normal, but not especially long; nasal feathers erect or inclined backward; nasal bristles either present or wanting.

g. No nasal bristles; nasal feathers inclined backward somewhat; first primary minute, not reaching to the tip of the wing coverts; white patch on the wing at base of primaries. . . . . (Page 37.) **Stur'nidæ.**

gg. Nasal bristles present.

h. Large birds; wing more than 4.00. (Page 35.) **Cor'vidæ.**

hh. Small birds; wing less than 4.00.

i. First primary not over .30; bill slender and notched near the tip; nasal openings not pronounced. . . . (Page 58.) **Sylvi'idæ.**

ii. First primary more than a third the length of the second; bill rather broad and flat; nasal bristles extending forward for half the length of the culmen........................(Page 36.) **Muscicap'idæ.**

ff. Tail feathers long, graduated; tail longer than the wing; nostrils basal in an unossified groove; first primary about half the length of the second; with or without auxiliary plumes.............(Page 56.) **Meliphag'idæ.**

ee. Tarsi not divided into scutulæ in front except at extreme lower portion; with few rectal bristles.

j. Wing less than 3.00; small brown birds; young not spotted (See **i.,** page 34).................(Page 58.) **Sylvi'idæ.**

jj. Wing more than 3.00; the young spotted...(Page 59.) **Tur'didæ.**

FAMILY ALAU'DIDÆ.—LARKS.

Genus.

Wing falling short of the tail by more than the length of the tarsus; hind claw very long; culmen shorter than the middle toe; first primary rudimentary; plumage mainly dull brownish..............................(Page 35.) **Alau'da.**

GENUS ALAU'DA LINNÆUS.

The feathers with blackish centres, everywhere producing a streaked appearance; the scapulars and lower mantle with greyish edges to the feathers; chest tawny buff streaked with black; outer tail feathers white with some dusky along the inner web. *Winter:* Plumage more tawny. *Young:* More tawny than the winter adults, with more white above and black streaks changing to subterminal spots of dark brown. Length about 7.50, wing 4.35–4.55, tail 2.90–3.05, culmen .45–.50, tarsus .95. *Hab.* Europe and Asia. Hawaiian Islands; introduced.

61. A. arven'sis LINN. **Skylark.**

FAMILY COR'VIDÆ.—CROWS, ETC.

Genus.

Bill without a distinct subterminal notch at the tip; hind toe strong; wing falling short of the tip of the tail by less than the length of the tarsus; nostrils concealed by bristles; first primary long as secondaries (Sub-family *Corvinæ*); tarsus longer than culmen..(Page 35.) **Cor'vus.**

GENUS COR'VUS LINNÆUS.

Head deep brown or blackish; back lightest on the tertiaries and secondaries, and grey-brown on the primaries; rump and tail blackish brown uniform with mantle; primary shafts brown above, below more whitish brown. Length 18.00–20.00, wing 13.00, tail 7.75–8.50, culmen 2.20–2.40, depth of bill 1.00–1.10, tarsus 2.50–2.65, toe 2.10–2.30. *Hab.* Hawaii.

Pl. XXVI., 6599. **62. C. hawaiien'sis** PEALE. **Hawaiian Crow, Alalá.**

Family **MUSCICAP'IDÆ**.—Fly-catchers.

Genus.

Bill broad, soft, rather flat, slightly hooked at the tip, and furnished with numerous rectal bristles which reach beyond the middle of culmen; culmen keeled; wing falling short of the end of the tail by about the length of the tarsus; wing longer than the tail; bill at base not as broad as the length of the hind toe without the claw; the second primary a half inch shorter than the third. Peculiar to the Hawaiian Islands. (Page 36.) **Chasiem'pis.**

Genus **CHASIEM'PIS** Cabanis.

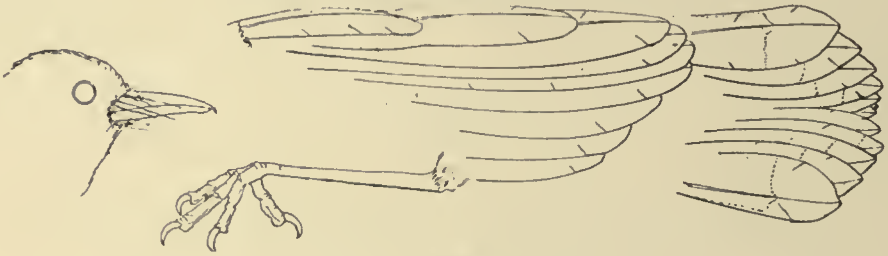

FIG. 1. C. SANDVICENSIS.

a. *Young of all species:* Wing coverts spotted with tawny ochraceous; throat ochraceous; base of lower mandible lighter without black or white on the throat.

b. Browner above, ochraceous of throat and tail coverts deeper; head not so ochraceous. (See description of adult *C. sandvicensis.*)

bb. Lighter, more ochraceous above, throat and upper tail coverts rusty ochraceous. (See description of adult *C. gayi* and *C. sclateri.*)

aa. *Adult of all species:* Wing coverts spotted with white; black or white or both on the throat; lower mandible dark; tail coverts white.

c. Above bluish grey. *Adult:* Above uniform dark smoky grey; upper tail coverts pure white; wing coverts blackish, with greater and lesser coverts tipped with white forming two fairly distinct bars across the wing; quills blackish with grayish fulvous edges tipped with white; lores and superciliary stripe whitish or buffy white; centre of throat white surrounded by buffy and buffy grey feathers, forming a more or less distinct pectoral girdle; sides of the body greyish white with wash of rusty; abdomen and under tail coverts white; white on outer web of tail feathers narrow and extending along the edge for the greater part of its length; white tip about .35 broad. *Young:* Deep tawny buff or ochraceous about the rump, head and neck; under tail coverts tawny; wing bands rusty. Length 5.25–5.50, wing 2.55–2.95, tail 2.35–2.60, culmen .45–.50, depth of bill .16, width .22, tarsus .80–.89, toe .65. *Hab.* Kauai.

Pl. XXVII., 6657, 9410. **63. C. scla'teri** Ridgw. **Apekepeke.**

cc. Above brownish.

d. White tips to the outer tail feathers, usually longer than .50; white tip and outer edging of the secondaries neither wide nor prolonged. *Adult:*

Above brown tinged with rufous; upper tail coverts white; forehead, lores and superciliary stripe white; wing coverts black with white spots; primary coverts blackish; primaries brown with rusty or buffy white edges; feathers of the throat black tipped with white, which is conspicuous in older birds; chest and sides of the body reddish brown, sometimes with white tips; abdomen and under tail coverts pure white; outer edge of outer pair of tail feathers whitish for most of their length; inner web white for at least .40. *Intermediate plumage:* Forehead, lores and superciliary stripe rusty white; upper parts similar to adult, usually more rusty; upper tail coverts white with ochraceous tinge; wings as above; throat white, followed by a sooty black patch, and this in turn by rufous brown as in adult; rest of lower parts similar to adult. *Young:* Tawny ochraceous brown above; head tawny with darker centres to the feathers; upper tail coverts ochraceous; primaries and tail feathers showing ochraceous; wing coverts brown tipped with ochraceous; under parts rusty, buff and grey passing to whitish grey on the abdomen. Length 5.50–5.75, wing 2.70–2.75, tail 2.40–2.65, culmen .47–.53, depth of bill .20, width .18, tarsus .90, toe .63. *Hab.* Hawaii.

Pl. XXVII., 9923, 9924. **64. C. sandviçen'sis**[36] (Gmel.). **Ẹlepaio.**

dd. White tips to outer pair of tail feathers usually less than .50; white tips and edgings to the secondaries quite pronounced; above brownish (feathers with bluish bases) washed with tawny ochraceous, especially about the head; tail coverts white; wing coverts brownish black forming a well defined bar; lesser coverts tipped less regularly with white; primaries brown with buff edges; forehead rusty ochraceous; lores and about the eyes white; chin white; throat black with more or less white tips (not so conspicuous as in *sandvicensis*); breast with some reddish brown; abdomen white. *Intermediate plumage:* Similar to young, but showing brownish black in the throat, and more or less white in the wing and tip of the tail. *Young:* Above, tawny ochraceous brown, most ochraceous on the sides and back of the neck; upper tail coverts tawny ochraceous; forehead, lores, chin, throat and chest tawny ochraceous; abdomen white; under tail coverts tawny; wing coverts and primaries brown with ochraceous edges, larger wing coverts sometimes showing white tips forming a less conspicuous bar than in adults. Length 5.50–6.00, wing 2.55–2.65, tail 2.50–2.55, culmen .40–.45, tarsus .95–1.00, toe .60. *Hab.* Oahu.

Pl. XXVII., 9252, 9258, 9255, 9259, 9260, 9407. **65. C. gayi** Wilson. **Oahu Ẹlepaio.**

FAMILY **STUR'NIDÆ.**—STARLINGS, MINAS, ETC.

Genus.

Hind claw stronger than the claw of the middle toe; in prepared skins the feet reach almost to the end of the tail; bill somewhat curved; culmen less than the tarsus in length..(Page 38.) **Acridothe'res.**

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[36] With the material at hand it is impossible to separate the two forms which are supposed to occur on the island of Hawaii.

GENUS **ACRIDOTHERES** VIEILLOT.

With a bare patch of yellow skin below and behind the eye; lower mandible black at the base; with white on the base of primaries forming a speculum; no black on breast and abdomen; above vinous brown with an ashy shade, as is also the breast and sides of the body; abdomen and under tail coverts white; head and neck blackish. *Female* similar. Length 9.50, wing 5.50, tail 3.45, tarsus 1.40. *Hab.* Indian Peninsula. Hawaiian Islands; introduced.

66. A. tristis (LINN.). **False Mina.**

FAMILY **FRINGILLIDÆ**.—SPARROWS, FINCHES, ETC.

Genera.

Depth of bill at base less than the length of hind toe with claw, and less than two-thirds the length of the tarsus.

a. Gonys slightly convex; a light brownish spot on speculum at base of quills. (Page 38.) **Passer.**

aa. Gonys not appreciably convex; no light spot or speculum at base of quills; wing less than five times as long as the tarsus; first quill decidedly longer than the fourth; depth of bill at base about equal to the length of culmen. (Page 38.) **Carpod'acus.**

GENUS **PASSER** BRISSON.

Brownish above; the back streaked with black; wing with two white bands; under parts pale greyish or greyish white. *Male:* With black throat continued over the chest; ear coverts dull grey; top of head greyish with a large patch of bright chestnut on the sides. *Female:* With the throat not black; back streaked or mottled with blackish; a pale superciliary stripe; cheeks dingy brown like the ear coverts; browner than the male. *Young:* Both sexes resemble the adult female but are whiter below, especially on the throat. Length 5.50–6.25, wing 2.90–3.00, tail 2.45–2.50. *Hab.* Europe, America, etc. Hawaiian Islands; introduced; common.

67. P. domesticus LINN. **European House Sparrow.**

GENUS **CARPOD'ACUS** KAUP.

Sides of body streaked or always with well defined shaft lines of brown, and with a distinct eyebrow; tail not decidedly shorter than wing; not distinctly emarginated (Sub-genus *Burrica*); crown of head not broadly streaked; abdomen ashy white streaked with brown; general color above light ashy brown slightly streaked with darker brown. *Male:* Rump, lores, forehead, throat and breast crimson. *Female:* General color above brown slightly mottled with dusky centres to the feathers; upper tail coverts like the back; crown similar and more or less mottled; lores ashy white; under surface white broadly streaked with dusky brown. Length about 5.25–5.50, wing 3.10, tail 2.35, culmen .40, depth of bill .30, tarsus .75, toe .50. *Hab.* Western part of North America. Hawaiian Islands; introduced.

68. C. mexica'nus obscu'rus McCall. **House Finch, "Rice Bird."**

Family PLOCEIDÆ.—Weaver Birds.

Genus.

The first primary short, not longer than the primary coverts (Sub-family *Viduinæ*); tail about equal to the wing; centre feathers somewhat produced and pointed, but the tail itself wedge-shaped and not greatly graduated; bill swollen and rounded; culmen strongly arched; tail moderately long, never exceeding the wing by as much as the tarsus with the middle toe and claw............(Page 39.) **Mu'nia.**

Genus MU'NIA Hodgson.

Legs dark; under tail coverts buffy white; throat deep chestnut; sides of body oculated with black and white spots; tail from above greyish olive yellow; rump feathers plain with lighter edges; general color above warm chocolate brown with narrow whitish shaft lines, the lower back waved with dusky brown cross bars; quills dusky brown. *Adult female* similar to the male in color. *Young:* Nearly uniform reddish brown; upper tail coverts more yellowish brown; wing coverts like the back; crown of head and sides of face like the back; under parts of the body deep sandy brown; feet and bill paler. Length 4.40–4.55, culmen .45, wing 2.15–2.30, tail 1.60–1.80, tarsus .60. *Hab.* Malayan Peninsula. Hawaii, Maui, Oahu; introduced.

69. M. niso'ria (Temm.). **Chinese Sparrow.**

Family DREPAN'IDIDÆ.—Honey-suckers.

Genera.

a. *Bill very strong*, deep and hawfinch-like in form; depth of bill at base about equal to (never less than) hind toe without the claw; culmen not longer than hind toe with the claw, and never shorter than .50. Length never less than 5.15.

b. Upper mandible longer than the lower by at least .10; both gonys and culmen strongly curved; plumage in adult males yellow on the throat.

c. Wing not exceeding 3.10; culmen strongly curved (parrot-like) and exceeding the lower mandible by the length of the hind claw; yellow super-loral stripe. (Page 53.) **Pseudones'tor.**

cc. Wing more than 3.10; culmen curved but not exceeding the lower mandible by more than the length of the hind claw (except rarely in *Psittacirostra*).

d. Back without any back shaft streaks; head yellow; upper mandible light colored.

e. Head, neck and chest bright gamboge yellow; primaries edged externally with yellow olive,,..,....................(Page 54.) **Loxioi'des.**

ee. Head and neck in the male yellow, female olive green; edge of primaries slightly yellow olive; feet light brown (in the skin).

(Page 53.) **Psittaciros'tra.**

dd. Back with more or less distinct blackish or brownish shaft streaks; upper mandible horn-color; feet black or bluish black.

(Page 54.) **Telespi'za.**

bb. Upper mandible exceeding the lower by not more than .10; bill very wide and deep; depth not less than .58, and width not less than .38.

f. Wing more than 4.00; bill bluish grey; gonys straight or very slightly decurved..................(Page 55.) **Rhodacan'this.**

ff. Wing less than 4.00; bill dull flesh color and very thick and clumsy; gonys curved...................... (Page 56.) **Chlor'idops.**

aa. Bill of various forms but never deeper nor broader than .30; or, if so, very long and much decurved.

g. Culmen, cutting edge of mandibles and gonys all perceptibly decurved, except in *Heterorhynchus wilsoni* where the gonys is straight (where curve of bill is questionable, culmen more than .50).

h. Culmen very long and remarkably curved; culmen never less (usually much more) than .70.

i. Upper mandible at least one-third its length longer than the lower mandible; color never red or black.

(Page 51.) **Heterorhyn'chus.**

ii. Upper mandible not one-third longer than the lower mandible; tip of the wings falling short of the tip of the tail (in the skin) by less than the length of the tarsus.

j. Bill light vermilion (becoming decidedly paler in old skins); primaries and tail feathers black. (Page 42.) **Vestia'ria.**

jj. Bill for the most part black or blackish brown; lores black or brownish black.

k. Plumage chiefly olive; primaries never edged or tipped with whitish; bill sickle-like. (Page 50.) **Hemigna'thus.**

kk. Plumage chiefly black; primaries edged or tipped with whitish.

l. With yellow feathers over the rump in adults; under tail coverts elongated and loose-webbed; bill less curved.

(Page 41.) **Drep'anis.**

ll. With no yellow in the plumage at any age; bill much stronger and much more curved; under tail coverts normal..................................(Page 42.) **Drepanoram'phus.**

hh. Culmen not very long nor remarkably curved; both of the mandibles of practically the same length.

m. With a more or less prominent crest; length more than 6.50....................(Page 43.) **Palme'ria.**

mm. Without crest; adult birds either crimson or yellowish olive; length less than 6.50.

n. General color crimson, or with more or less red cast to the plumage; bill and feet black or blackish. (Page 43.) **Himati'one.**

nn. General color yellowish olive or olive grey; upper mandible brown or bluish slate at the base.

o. The bill but slightly curved; culmen more than .75; wing more than 2.95; bill bluish slate. (Page 46.) **Viridon'ia.**

oo. The bill curved; culmen less than .75; wing less than 2.95; upper mandible brown. (Page 44.) **Chlorodrep'anis.**

gg. Bill practically straight, or where questionable less than .50; wing less than 3.40.

p. Bill bluish horn at the base (finch-like), sometimes slightly crossed at the tip; feet black or blackish.

q. Lores not black; neck above and below nearly uniform in color; crown never gamboge yellow. (Page 48.) **Lox'ops.**

qq. Lores black; color of neck above and below different; crown gamboge yellow in adults. (Page 48.) **Chrysomit'ridops.**[37]

pp. Bills of various forms, but not bluish horn at the base; feet brown or pinkish in life.

r. Breast, wings and tail black, with red on under parts; length 5.50.......(Page 44.) **Cir'idops.**

rr. The breast, wing and tail not black; no red in the plumage; length less than 5.50.

s. Larger; the wing more than 2.30; outer primary (first primary wanting) as short or shorter than the fifth from the outer..............................(Page 46.) **Oreomy'za.**

ss. Smaller; wing less than 2.30; outer primary equal to the fifth from the outer; bill slender, very slightly decurved; never more than .55..............(Page 46.) **Rothschild'ia.**[38]

GENUS **DREP'ANIS** TEMMINCK.

With yellow on the rump and upper tail coverts; both mandibles practically the same length and strongly curved; culmen more than equal to the tarsus in length;

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[37] Included under the genus *Loxops;* see page 48.

[38] United with the genus *Chlorodrepanis*, the single species thereby becoming *Chlorodrepanis parva* (Stejn.).

body, both above and below, fine deep black; rump, upper tail coverts, under tail coverts, thighs, lesser wing coverts and margin of the wing fine rich yellow, "crocus yellow" (Wilson); primary coverts white; tail feathers blackish, showing a little dull white for .50 along the shaft of the outer pair; primaries black with the outer edge, for its distal third, white; secondaries black tipped with white. *Sexes and young:* Length about 8.00, wing 4.00–4.15, tail 2.65–2.90, chord of culmen 1.62–1.70, depth of bill .30, width .30, tarsus 1.15, toe .75. *Hab.* Hawaii.

70. D. paci'fica (Gmel.). **Mamo.**

Genus DREPANORHAM'PHUS Rothschild.

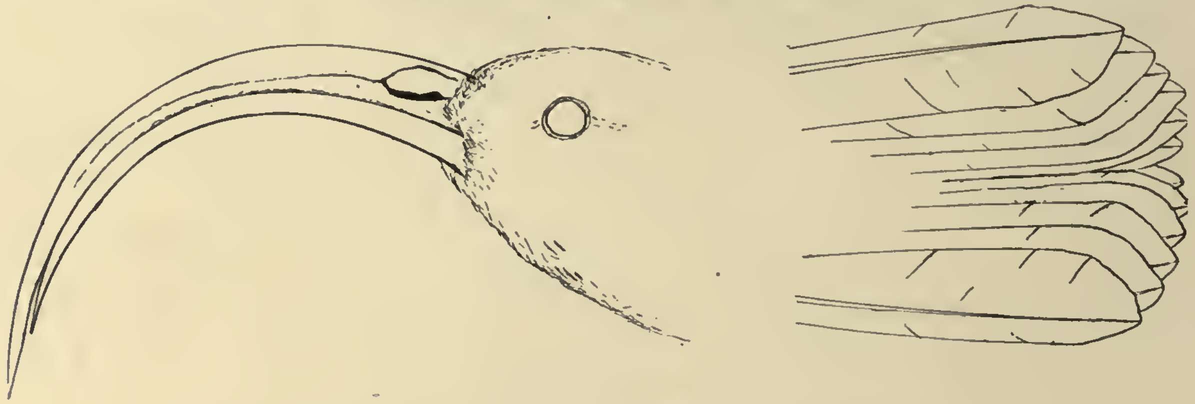

FIG. 2. D. FUNEREA.

With the upper and lower parts fine deep black, with no yellow on the rump; base of the upper mandible yellow or whitish; tail and inner edge of primaries deep black; outer edge of primaries smoky black at base, passing to whitish and forming a white conspicuous patch. *Female:* Similar, but with a shorter bill. Length about 8.00, wing 3.90–4.00, tail 2.55–2.80, chord of culmen 1.85–2.15, depth .32, tarsus 1.10–1.20, toe 1.00. *Hab.* Molokai.

Pl. XXVII., 6696. **71. D. fune'rea**[39] (Newton). **Perkins' Mamo.**

Genus VESTIA'RIA Fleming.

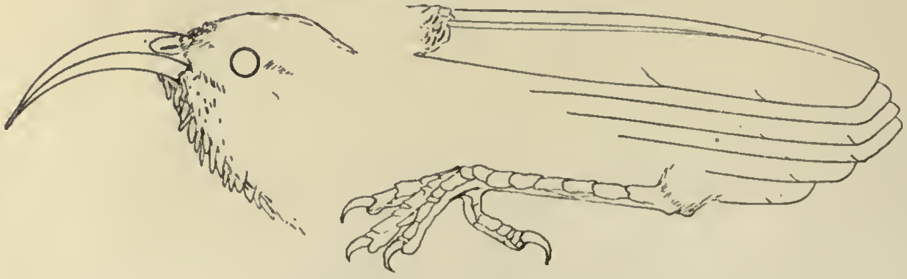

FIG. 3. V. COCCINEA.

Bill curved; about the same length as head; bill and feet vermilion in life, drying whitish; general color uniform scarlet vermilion including scapulars and lesser wing coverts; tertiaries tipped with white; wing and tail feathers deep black. *Female* similar. *Young:* All the vermilion parts grey, with some greenish and gallstone yellow; feathers with black tips, and vermilion showing here and there. Length 6.00, wing 2.87, tail 2.00, tarsus 1.00–1.12, culmen .97–1.10. *Hab.* Hawaiian Islands, throughout the group.

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[39] I take pleasure in adopting the new generic name for *D. funerea* (Newton) proposed by the Hon. Walter Rothschild in his "Avifauna of Laysan, etc." (Part III., p. 163). While it is unfortunate that the single example of this genus could not have been left as a species of the old and well known genus *Drepanis*, the facts are the form differs from it sufficiently to warrant the change.

Pl. XXVIII., 9792, 9342, 9338, 9333, 9340, 9348, 9899. **72. V. coccin'ea** FORSTER. **Iiwi.**

GENUS **PALME'RIA** ROTHSCHILD.

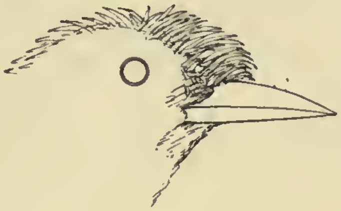

FIG. 4. P. DOLEI.

Forehead and crown covered with long lanceolate feathers forming a linear crest which rolls forward over the base of the beak; crest grey in front, darker on the crown; occipital feathers lanceolate, elongated and tipped with bright scarlet orange; feathers of the back blackish with silvery shaft stripes and tipped with scarlet orange; tail and wing feathers black, the former tipped (?), the latter narrowly margined with whitish; throat dirty silver grey; breast like the back. *Young:* Brownish grey above, with some black feathers showing orange tips; breast showing smoky grey; under tail coverts whitish. Length 6.50–6.75, wing 3.30–3.50, tail 2.65–2.80, culmen .70–.75, depth of bill .25, tarsus 1.10–1.20, toe .80. *Hab.* Molokai, Maui.

Pl. XXVIII., 6595, 6596. **73. P. dolei**[40] (WILSON).

GENUS **HIMATI'ONE** CABANIS.

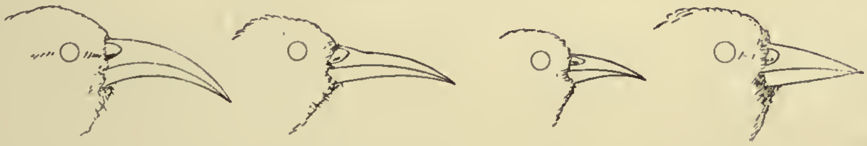

FIG. 5. C. STEJNEGERI. H. SANGUINEA. C. PARVA. O. BAIRDI.

a. General color above dark crimson (blood red), richest on the head and neck; primaries black, faintly edged with ashy; secondaries with crimson buff; tail feathers black; throat, breast and sides uniform with the back; abdomen white. *Female:* Slightly lighter than the male(?). *Young:* General color brown, washed with fulvous or buff; with buffy margins to the wing coverts; lower parts similar to upper; with or without crimson feathers here and there, varying with age. Length 5.15–5.25, wing 2.70–3.00, tail 2.05–2.15, culmen .65–.70, depth of bill .15, tarsus .75–.80, toe .70. *Hab.* Hawaiian Islands, throughout the group.

Pl. XXVIII., 7996, 9803, 9322, 9898, 9309, 9324. **74. H. sanguin'ea** (GMEL.). **Apapa'ne.**

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[40] The above species was named in honor of Hon. S. B. Dole, and not a "wine jar" as the erroneous spelling *dolii* would make it.

aa. Head, throat and breast bright scarlet vermilion, richest on the head; abdomen grey-brown; under tail coverts lighter brown; upper tail coverts a lighter shade of vermilion than the head; primaries brownish black edged with buffy; secondaries brown edged with buffy and vermilion. *Female:* Similar, but paler. *Young:* Dull brown above and light ash on the under parts. Lighter than *H. sanguinea*, and with a shorter bill. Length about 5.25, wing 2.48–2.65, tail 2.25–2.40, culmen .50–.55, depth of bill .20, tarsus .80–.85, toe .70. *Hab.* Laysan.

75. H. freethi Roths. **Laysan Honey-eater.**

Genus CIR'IDOPS Wilson.

Breast, wings, tail and forehead black; occiput and upper part of mantle silvery grey, shading into smoky grey-brown on the mantle; lower breast, rump, upper tail coverts and median wing coverts bright scarlet; under tail coverts rich brown. Sexes and young unknown. Length about 5.50, wing 3.30, tail 2.20, culmen .40, tarsus .75, toe .70, hallux with claw .65. *Hab.* Hawaii.

76. C. anna (Dole). **Ulaaihawane.**

Genus CHLORODREP'ANIS Perkins.

Upper parts olive; lower parts more or less olive or yellow; bill curved; first primary wanting; second primary equal to or longer than the third and fourth; nasal opercula overhung at the base by a few weak bristles; fifth quill equal to or longer than the first. *Young:* Duller and very similar in color, usually greyish olive on the back.

a. Wing never less than 2.35, bill perceptibly decurved.

b. Adults larger in size with stronger bills; beak not less than .60; wing in males not less than 2.55.

c. With scarcely a trace of black on the chin at the base of the lower mandible; lores blackish with a yellowish super-loral stripe; scarcely a trace of black at base of upper mandible; upper parts olive green, yellowest on the rump; forehead yellower olive than the crown; primary coverts, wing and tail feathers brown edged with olive; lower parts golden green, almost lemon yellow; bill strongest of the seven species. *Female* very similar. Length about 4.50–4.85, wing 2.62–2.70, tail 1.62–1.70, culmen .72–.75, depth of bill .25, tarsus .92, toe .70. *Hab.* Kauai.

Pl. XXIX., 9396. **77. C. stejneg'eri** (Wilson). **Kauai Amaki'hi.**

cc. With a fairly distinct, narrow, ill-defined, blackish band about the base of the beak; lores blackish; yellow super-loral stripe not reaching quite to the base of the beak.

d. Trifle larger; tarsus .82–.95; centre of breast yellower; upper parts dark olive green, yellowest on the rump, darkest on the head; lower parts fine yellow, yellowest on the chest; thighs grey; wing coverts, wing and tail feathers brownish black edged with olive. *Female:* Above greyish olive, greyest on the head, showing most yellow on the upper tail coverts and outer edge of primaries and tail feathers; with a whitish yellow super-loral stripe; lower parts grey washed with yellow. Length 4.50–4.70, wing 2.45 (♀ wing 2.75?), tail 1.75–1.95, culmen .60–.70, depth of bill .16, tarsus .80–.95, toe .65. *Hab.* Maui.

78. C. wilson'i (Roths.). **Maui Amakihi.**

dd. Trifle smaller; tarsus .75–.82; centre of breast more olive yellow. Length about 4.50, wing 2.40–2.60, tail 1.65–1.95, culmen .55–.65, depth of bill .16, toe .60. *Hab.* Molokai.

79. C. kalaa'na (Wilson)[41]. **Molokai Amakihi.**

bb. Adults averaging smaller in size; with weaker bills; beak not more than .60; wing not more than 2.60.

e. Above yellowish green, yellowest on the rump; bright yellow on the chest.

f. Abdomen showing more white; rump not so decided yellowish olive; wing coverts, primaries and tail feathers edged with olive green; edge of wing yellowish; under wing coverts white; lores, together with a scarcely perceptible streak over the base of the upper mandible, blackish; super-loral stripe indistinct yellow. *Female:* Grey olive green, greyest on the head; more tawny on the rump; wings and tail edged with olive; secondaries outer edge at tip white; median and greater wing coverts tipped with white or ochraceous white; greyish on the throat with more or less wash of yellow passing to tawny white on the breast, and fulvous on lower flanks. *Young males:* Showing more yellow and olive on the under parts. Length 4.75–5.10, wing 2.45–2.60, tail 1.70–1.80, culmen .56–.60, depth of bill .16, tarsus .80, toe .86. *Hab.* Oahu.

80. C. chloris (Cab.). **Oahu Amakihi.**

ff. Back olive yellow, becoming decided yellow olive on the rump; less olive below; lores greyish sooty; super-loral stripe less strongly contrasted with the adjacent parts. *Female:* Back quite olive grey, yellowest on the rump; lores darkest; super-loral stripe quite distinct; lower parts yellowish grey with olive. Length 4.20–4.40, wing 2.35–2.50, tail 1.70–1.80, culmen .60, tarsus .75–.85, toe .65. *Hab.* Lanai.

81. C. chloridoi'des[42] (Wilson). **Lanai Amakihi.**

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[41] Differing but slightly from typical *C. chloris* and Mr. Wilson's proposed *Lanai* species *C. chloridoides.* Selected specimens from a short series of spring birds (May to June) show the following fairly constant differences. *Males:* Under parts of *kalaana* more olive and golden than in *chloridoides*, which in turn is less lemon yellow than in typical *chloris;* color of feet and beak similar; *kalaana* duller olive yellow above than *chloris*, which is duller than *chloridoides* which is decidedly yellowish olive on the rump; lores of *kalaana* blackest, *chloridoides* next, while *chloris* is decidedly greyish sooty; super-loral stripe most extensive in *kalaana*, brightest in *chloris*, and least contrasted with the adjacent parts in *chloridoides.* With the females *kalaana* is lightest olive grey above, quite light over the upper mantle and differing from *chloris*, which is deeper, and from *chloridoides* in being less olive grey; rump and tail coverts of *kalaana* grey with but slight olive cast; *chloris* is tawny olive, while *chloridoides* is olive green; lores of *kalaana* smoky grey, not differing from *chloris*, but lighter than *chloridoides* where they are sooty; super-loral stripes in *kalaana* yellower and more noticeable than in *chloris*, and less so than in *chloridoides* which is quite a decided yellow; below, *kalaana* greyish olive white with yellow wash; *chloris* with more grey and less yellow; *chloridoides* yellowish olive. Hence, *male kalaana* has the under parts more olive and golden, duller olive yellow above; lores blackest; super-loral stripe more extended; otherwise similar to *chloris*. *Female:* Lighter olive grey above, quite light over the mantle; rump similar to upper mantle; lores smoky grey; super-loral stripe more noticeable than in *chloris;* below, greyish olive washed with yellow; differing least from *chloris* Both *kalaana* and *chloridoides* seem to be species of only sub-specific value.

[42] See note to *C. kalaana.*

ee. Above yellowish olive with faint indication of orange(?)—not noticeable on old faded specimens—which is strongest on the rump; primaries and tail quills brownish edged with olive; lores and a narrow line over the forehead blackish; lower parts yellowish olive. *Female:* Duller than the male, with ashy cast to the upper parts; lower parts paler. *Young:* Similar to female. Length 4.40–4.60, wing 2.45–2.60, tail 1.65–1.80, culmen .50–.55, tarsus .85–.90, toe .65. *Hab.* Hawaii.

82. C. virens[43] (Gmel.). **Hawaii Amakihi.**

aa. Wing less than 2.30; bill but slightly decurved; smallest of the Hawaiian birds; bill more slender than in typical *Chlorodrepanis;* upper parts more uniform yellow. *Male:* Above, head, mantle and outer edge of wing and tail quills yellowish, brighter than an olive yellow; rump yellowest; below uniform yellow with but slight greenish tint. *Female:* Similar in size but much greener both above and below, with the under parts much duller, fading into greyish olive on sides of the abdomen. *Young* similar to female. Length 4.00–4.25, wing 2.20–2.30, tail 1.45–1.55, culmen .50–.53, tarsus .75–.80, toe .55. *Hab.* Kauai.

83. C. parva[44] (Stejn.).

Genus **VIRIDON'IA** Rothschild.

Bill straight or but slightly curved, high and strong at the base, more attenuated towards the tip, and sharp; fourth and fifth primaries about equal, second shorter than the seventh; tail rather short; sexes similar; above olive green, showing more yellow on the forehead, chin and upper tail coverts; under parts more yellowish olive, greener than the upper parts and with a faint ochraceous cast; tail blackish brown with yellowish olive margins; under surface of wing dark ash with dusky white quills. Wing 2.80–3.00, tail 1.70–1.75, culmen .70, tarsus .83–.86, toe .73–.75, depth of bill .23. *Hab.* Hawaii.

84. V. sagittiros'tris Roths.

Genus **OREOMY'ZA** Stejneger.

Under mandible straight, or at least not perceptibly curved; plumage soft and fluffy; tarsus covered in front with four, five or six scales; nasal operculum slightly overhung at the base by tiny feathers; tip of the wing formed by the third, fourth, fifth, or by the fourth, fifth and sixth feathers, the second shorter than the sixth; first primary obsolete.

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[43] Mr. Rothschild (Avifauna of Laysan, Part III., page 129) gives *Oreomyza perkinsi* as a new species from Hawaii, describing it as follows: "*Adult male:* Above light olive green (Ridgway Nom. Colors, Pl. X., No. 18), brighter on the rump; quills black edged with oil green; below olive yellow; vent greenish white; thighs dirty white; under wing coverts white with a yellow tinge; lores black; iris dark brown; legs and feet greyish brown; soles of feet yellowish-flesh color; upper mandible dark brown with paler base; lower mandible grey. Total length about 5.5 inches; wing 2.6, tail 1.7, tarsus 0.85, culmen 0.63. One male, Puulehua, Hawaii, September 25, 1891." In commenting on the specimen in the Tring Museum Mr. Rothschild states that the "remarkable specimen has a long but straight bill...........The coloration is that of *Chlorodrepanis virens*...........and that it might be a hybrid between *Oreomyza mana* and *Chlorodrepanis virens*." The B. P. Bishop Museum series, embracing many recently collected specimens, show *virens* with beaks approaching the straight form, though none that are to be confounded with the *Oreomyza* type; while fine old males of *Oreomyza mana* are much more highly colored than has been usually supposed. The only character in Mr. Rothschild's description which seems to be of specific value, when compared with the Museum series, is the length, which is given as almost an inch longer than the average of either *mana* or *virens*. Since the author fails to call attention to this point it may possibly be a typographical error. Mr. Henshaw informs me he has taken nothing that conforms with the description, and as Mr. Perkins has not met with the bird the status of the species is somewhat doubtful.

[44] At the suggestion of my friend Professor H. W. Henshaw we have made a careful study of the alcoholic material in the Museum, and find the tongue of *parva* to be distinctly tubular in form; a fact which alone would at once remove it from the genus *Oreomyza*, and which at the same time indicates its affinity with the tube-tonged *Chlorodrepanis* group. My observations of the bird alive, while collecting on Kauai, convince me that its habits are those of the *Chlorodrepanis* rather than of *Oreomyza*.

a. Plumage not red.

b. Under parts not yellow or greenish yellow; culmen about .50, tail about 1.85.

c. Bill light colored; breast white or buffy white. *Male:* Above clear olive grey faintly washed with olive green, which is most marked on the rump; nearly white on the chin, becoming olive buffy on the breast; more yellowish on the abdomen, with the sides of the body light smoky olive grey; lores and forehead buffy white. *Female:* Similar, but duller. *Young:* With forehead, lores, superciliary stripe and throat white. Length 4.40–4.65, wing 2.50–2.75, tail 1.75–1.85, culmen .42–.50, depth of culmen .20, tarsus .78–.85, toe .55. *Hab.* Kauai.

Pl. XXIX., 9402. **85. O. bairdi** Stejn. **Akikihi.**

cc. Bill dark colored; below, whitish buff on the throat, becoming greener and greyer on the lower breast; lores sooty; abdomen and under tail coverts white with a yellowish wash; primaries and quills brownish. *Female:* Similar, but duller in color. *Young:* Similar, but showing more buffy white about the base of the bill and lores. Length 4.25–4.50, wing 2.60, tail 1.80–1.90, culmen .50, depth of bill .20, tarsus .85–.90, toe .70. *Hab.* Hawaii.

Pl. XXIX., 6664. **86. O. mana'**[45] (Wilson).

bb. Under parts, throat, etc., greener or yellower; bill and tail relatively longer.

d. Yellowish olive green above; yellow of the forehead extending farther back onto the crown; crown and entire upper parts, including the edge of outer web of primaries and tail feathers, light yellowish green; primaries and tail feathers brownish black; lower parts, including edge of wings, lemon yellow; sides of body yellowish olive. *Female:* Similar to adult male, but less bright yellow below (Rothschild). *Quite young:* Greyish olive above, tail showing the most olive shade; median and greater wing coverts tipped with buffy white, forming two distinct bands across the wing; below, greyish white showing some yellow. Length about 4.50, wing 2.30, tail 1.95, culmen .50–.55, depth of bill .18, tarsus .92, toe .65. *Hab.* Lanai.

87. O. monta'na (Wilson). **Alauhiio.**

dd. Olive green above, yellow of the forehead more restricted.

e. Broad dusky loral mark; bill stronger; color deeper olive brown; more golden beneath. *Adult male:* Somewhat similar to adult *C. chloris*, but with the olive upper plumage darker, though tinged with yellow; forehead brighter than the crown, and with an obvious though ill-defined yellowish streak over the eye; lores brownish black; chin, cheeks, auriculars and throat clear golden yellow, which color pervades the breast and belly, becoming very pale, almost white on the abdomen; lower tail coverts pale yellow; wing coverts with distinct whitish marks of considerable size. *Female:* Very unlike the male above described; streak over the eye and under parts yellowish white; sides of breast and flanks washed with olive grey; above, olive; the greater wing coverts with large greenish white tips. *Young:* Quite young birds and nestlings are much like the females, but are browner above and of a mottled appearance. Length 4.50–5.00, wing 2.60–2.81, tail 1.85–2.00, tarsus .80–.86, culmen .60–.65 (Rothschild). *Hab.* Oahu.

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[45] See note following *Chlorodrepanis virens*, page 46.

88. O. macula'ta Cab.

ee. Loral mark not so pronounced; greener above and paler yellow below; bill a trifle slenderer; forehead, lores, cheeks, chin and under parts bright lemon yellow; upper parts olive green, yellowest on the upper tail coverts; sides of body washed with olive; quills and tail feathers brown externally, edged with olive. *Female:* Similar to the male, but duller above and below. *Young:* Above grey with an olive tinge, more greenish grey on the rump; indistinct whitish super-loral stripe; throat and centre of body light buffy grey, greyer on the sides, with a faint wash of yellow; a distinct whitish buff band formed by the tips of the greater wing coverts. Length 4.50–4.65, wing 2.40–2.50, culmen .45–.50, depth of bill .15, tarsus .82–.85, toe .65. *Hab.* Maui.

Pl. XXIX., 6684, 6685. **89. O. new'toni** (Roths.).

aa. Plumage rich scarlet; bill and feet light; head all round, back and lower parts bright rich scarlet, darkest on the back, purest scarlet on the throat; upper mandible brownish grey above, darkest near the tip; under mandible whitish yellow; tarsus light brown in skins, pink in life. *Female:* Back and head brownish grey with a mixture of brownish dull scarlet, most apparent on the head and rump, outer edge of wing and tail feathers; under parts greyish white tinged with salmon and dull scarlet. *Young males* have more or less strong mixture of ferruginous brown or rufous above, washed with deep brown along the sides of the body, more obvious in younger individuals. Length 4.95–5.20, wing 2.60, tail 2.05–2.20, culmen .53–.55, depth of bill .17, tarsus .85–.90, toe .70. *Hab.* Molokai.

Pl. XXVIII., 6681, 8089, 8088. **90. O. flam'mea** (Wilson). **Kakawahie.**

Genus **LOXOPS** Cabanis.

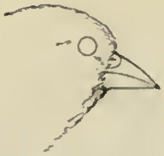

FIG. 6. L. COCCINEA.

Bill short and finch-like; culmen much shorter than the tarsus; wing moderate length, falling considerably short of the tail, and not equal to the length of the tail and tarsus combined; bill bluish grey.

a. General color red, foxy or orange; no black on lores or forehead.

b. General color above, scarlet orange, dullest on the mantle; wing coverts, wing and tail feathers brownish black edged externally with dull scarlet orange; below, uniform scarlet orange, brighter than the back. *Female:* Greyer on the crown; loral region dusky whitish; back greyish with olive tinge, olive most pronounced on the rump and edge of wing and tail feathers; chin grey; breast greyish olive, greyer on the sides of body. *Young:* Similar to female; bill paler than in adults. Length 4.25–4.60, wing 2.40–2.50, tail 1.85–2.05, culmen .42, depth of bill .20, tarsus .77–.79, toe .60. *Hab.* Hawaii.

Pl. XXVIII., 6648, 6642. **91. L. coccin'ea** (GMEL.). **Akep'a.**

bb. General color above, orange or foxy.

c. Uniform orange, brightest on the breast; more yellow orange on the rump; primaries and tail feathers blackish brown edged with orange, like the back. *Female:* Similar, but duller. *Young:* Back of head and mantle decided grey with slight olive tinge; rump and breast more olive; sides greyer olive, very similar to young of *L. coccinea.* Length about 4.50, wing 2.60, tail 2.00, culmen .40, depth of bill .20, tarsus .80, toe .67. *Hab.* Maui.

Pl. XXVIII., 6638. **92. L. ochra'cea** ROTHS.

cc. Body, red foxy; lores blackish; wings and tail olive brown; wing coverts, quills and tail red-edged; inner edge of quills and under wing coverts white; bill short, triangular, conic; tip straight, acute, whitish; feet brown; tarsus nine lines (Grey's description). Gould says "that the whole of the plumage is rich rusty red deepening into brownish red on the back........Length 4 inches, bill $\frac{7}{15}$, wing $2\frac{1}{4}$, tail $\frac{3}{4}$, tarsus $\frac{3}{4}$." *Hab.* Oahu.

93. L. rufa[46] (BLOX.).

aa. With lores, a ring about the eye, and forehead smoky black; crown gamboge yellow fading into rich olive and passing into olive green on the mantle and wing coverts; rump, tail coverts and edge of tail feathers brighter yellowish olive; edge of primaries like the back; lower parts, including the sides of head, bright gamboge yellow, passing to olive yellow on the sides of the body; thighs smoky grey; wings and tail blackish brown. *Female:* Similar, except more green in the yellow, and with loral region not as well defined. *Young:* Greyish green above, grey with a very faint yellowish green wash below; sometimes smoky tips to the feathers; lores and forehead not well defined; bill lighter. Length 4.50–4.60, wing 2.40–2.50, tail 2.00–2.15, culmen .43–.45, depth of bill .20, tarsus .85, toe .60. *Hab.* Kauai.

Pl. XXIX., 9353, 9361. **94. L. cæruleiros'tris**[47] (WILSON). **Ou holowai.**

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[46] Since the above description was written I have had the pleasure of examining the *Loxops* in the British Museum collections and quite agree with Mr. Rothschild in separating the Oahu species; and with Mr. Wilson in placing *westenholmii*, Roths., as a synonym of *L. rufa* (Blox.).

[47] Should be held sub-generically distinct from the other three members of the genus on account of the stronger bill, smoky loral patch and general color which is always different from typical *Loxops*.

GENUS **HEMIGNA'THUS** LICHTENSTEIN.

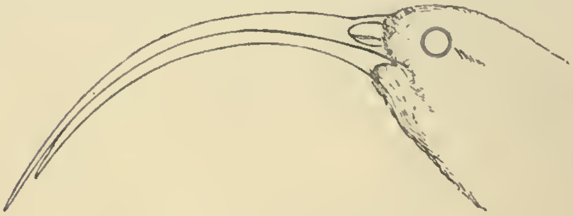

FIG. 7. H. OBSCURUS.

Bill very long, slender and curved, with the tongue as long as the bill; feet reaching to the tip of the tail (in the skin); tip of the wings falling short of the tip of the tail by less than the length of the hind toe and claw.

a. Back dull olive green; . . . . .species has very inconspicuous plumage; the whole upper surface and wing feathers on the outside are dull olive green, the inner webs of the flight feathers dull brown. The under surface is light but still dull; throat and centre of the abdomen, as well as the under tail coverts, pale buff. A bright yellow superciliary stripe is very conspicuous, especially as directly underneath it from the beak to the eye there is a dark brown streak. The bow-shaped, curved bill, which terminates in a very fine, almost hair-like point, is exactly half as long as the body, and the under mandible is three lines shorter than the upper. The whole length, from the point of the bill to the end of the tail is 7 inches, bill 1¾, tail 1¾, tarsus 11 lines, middle toe and claw 9 lines (Excerpt from Rothschild's translation of Lichtenstein's description). *Hab.* Oahu; rare or extinct. (No specimens in the Museum.)

95. H. lichtensteini[48] WILSON. **Kipi.**

aa. Yellowish olive green above; under parts yellower.

b. Smaller size; bill shorter; above all over a beautiful bright olive green with a yellowish cast, yellowest on the rump, and with a distinct yellow mark over the eye; throat, sides of face and breast duller olive green than the back, fading into distinct whitish on the abdomen and under tail coverts, varied only with an olive wash; primaries and tail feathers brown with olive on the outer edges; lores smoky black; wings falling short of the tip of the tail by less than .50 (in the skin). *Female:* Above, greyish olive green; more olive green on the rump; lores blackish, above which is a pale superciliary stripe; chin whitish or greyish white with a yellowish tinge, becoming yellower on the chest and under parts, with olive tinge along the sides. *Young:* Similar to female. Length 6.25–6.50, wing 3.00–3.15, tail 1.80–1.85, chord of culmen 1.25–1.38, tarsus .87–.92, toe .80–.85, depth of bill .20, width of bill .25. *Hab.* Hawaii.

Pl. XXIX., 9421. **96. H. obscur'us** (GMEL.). **Akialoa.**

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[48] Since the first reference in Gray's synonomy (Cat. Birds Trop. Isds., p. 9) for *Drepanis* (*Hemignathus*) *ellisiana* is given "*Certhia obscura* (nec Gmel.) Vieill. Ois. dor. t. 53?". I prefer to consider that it is the *reference* to the exact place in the volume cited that Gray was in doubt about, and that he did not intend questioning the name *Certhia obscura*. That being the case *Drepanis* (*Hemignathus*) *ellisiana* will become a synonym of *Hemignathus obscurus*. Hence it seems that Mr. Wilson's name *H. lichtensteini* should stand.

bb. Larger size, bill and wing longer.

c. Chord of culmen not less than 1.95, averaging 2.15; above, bright olive yellow, yellowest on the rump; on crown and forehead the feathers have dark centres with olive edges which give a "scaled" appearance to the region; a distinct superciliary stripe; under parts from chin to tail yellow with an olive tinge; wings and tail brown edged with olive on the outer webs; lores black. *Female:* Quite different from the male; above, grey with an olive tinge; rump yellowish olive; head scaled as in the male; super-loral line dingy yellowish white; lores black; throat greyish white; breast yellowish white with an olive green wash. *Young:* Have less yellow below and over the eye, scarcely any olive on the back, which is greyish; scales on the crown less noticeable. Length 7.00–7.50, wing 3.40–3.55, tail 2.10–2.25, chord of culmen 1.95–2.35, tarsus 1.05–1.10, toe 1.00. *Hab.* Kauai.

Pl. XXIX., 8130. **97. H. pro'cerus** Cab. **Kauai Akialoa.**

cc. Chord of culmen not exceeding 1.95(?). Above, yellowish olive green somewhat mixed with greyish brown on the head where the bases show through. Quills dark brown edged with the color of the back; rectrices the same. Below, yellowish olive green much less bright than on the back and with little yellow in it, shading into olive buff on the vent, and with a brown pale shade on the throat, etc. Length 6.00 inches in the skin, wing 3.30, tail 2.10, tarsus 1.93, chord of culmen 1.90. *Female:* Smaller, more greenish olive, and less bright; superciliary stripe faint and greenish. Chin, throat and middle of abdomen buffish yellow (From Rothschild's description). *Hab.* Lanai.

98. H. lanaien'sis Roths. **Lanai Akialoa.**

Genus **HETERORHYN'CHUS** Rothschild.

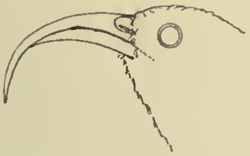

FIG. 8. H. AFFINIS.

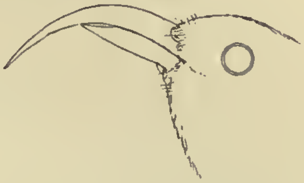

FIG. 9. H. WILSONI.

Upper mandible much longer than the lower; tongue not as long as the upper mandible.

a. The under mandible curved; smaller size.

b. Head yellow; no decided superciliary stripe.

c. Color of the forehead bright deep gamboge yellow, not extending over the crown, sharply defined from the greyish olive of the neck and back; wings and tail blackish brown with olive outer edges to the feathers; lores black, and connected by a narrow black band across the forehead; throat and chest rich gamboge yellow; abdomen whitish with a yellowish cast; flanks olive grey; edge of wing yellowish. *Female:* Above, olive green, a yellowish super-loral stripe; lores dusky grey; chin and throat yellow; centre of lower parts pale yellow; sides olive grey. *Young:* Similar to female. Length 5.00–5.25, wing 2.95–3.00, tail 1.80–1.95, chord of culmen .95–1.05, tarsus .85–.90, toe .75–.80. *Hab.* Maui.

Pl. XXIX., 6620. **99. H. affi'nis** Roths.

cc. Gamboge yellow of the forehead more or less indefinable from the fine olive yellow of the back into which it gradually merges, olive yellow purest on the rump; primaries and tail feathers brown edged with the olive of the back; lores and a narrow line above the bill a deep black; throat, breast and sides of the head a bright gamboge yellow, brighter than the forehead; breast with a slight olive tinge; abdomen and under tail coverts white. *Female:* Above, grey with an olive cast, most pronounced on the head and rump. Below, dusky white, greyest on the sides of the body and throat. *Young:* Similar to females, the males showing yellow on the throat at an early age. Length about 5.50, wing 2.85–3.20, tail 1.85–2.05, culmen .95–1.10, tarsus .90, toe .80. *Hab.* Kauai.

Pl. XXIX., 6633, 6636. **100. H. hanape'pe** (Wilson). **Nukupu'u.**

bb. Head green; a very distinct superciliary stripe. *Male specimen in Paris Museum:* Above, olive green, darker and more olive on the back; lighter, more green on the head, wing and tail coverts; lores and line behind the eye brownish black. Across the forehead and above the eyes conspicuous orange yellow superciliary stripe; Quills deep brown, outer web edged with greenish yellow; chin, throat and upper breast bright orange yellow; abdomen yellow and fading into pale greenish grey on the vent and under tail coverts. *Adult female or immature male in the Frankfort Museum:* Above, dull brownish olive tinged with greenish on the top of the head, rump and upper tail coverts and on the edge of the quills and tail feathers. Lores dusky; a somewhat ill-defined but distinct superciliary stripe; sides of the head and throat yellowish. An immature male in the Leiden Museum is somewhat similar to the Frankfort specimen. Length 5.50, culmen 1.10, wing 2.95, tarsus .76, tail 2.9(?). (Condensed from Rothschild's descriptions in Avifauna of Laysan, etc.) *Hab.* Oahu; extinct.

101. H. lu'cidus (Licht.).

aa. Gonys of under mandible straight and strong at the base; above, olive green, brightest on the rump, and yellowest on the head; lores black; below rich gamboge yellow on the chin, gradually fading into olive yellow on the sides of the abdomen and under tail coverts; under wing coverts with yellowish shade of white; quills and primaries brown edged with olive. *Female:* Above, greenish olive grey, with olive brightest on the rump; throat and breast pale yellow shading into greyish white, with olive infusion on the belly and flanks. *Young* duller and greyer. Length 5.50–5.75, wing 3.20–3.35, tail 1.85–2.00, culmen .85–1.03, tarsus .90–.96, toe .85. *Hab.* Hawaii.

Pl. XXIX., 6632, 6630. **102. H. wil'soni**[49] ROTHS.

GENUS **PSEUDONES'TOR** ROTHSCHILD.

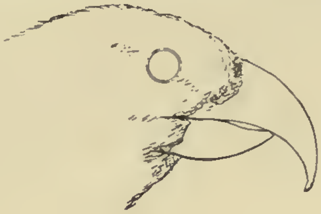

FIG. 10. P. XANTHOPHRYS.

Upper parts with grey bases to the feathers, and greenish olive ends, giving the back a somewhat greenish grey cast, more inclined to olive on the rump; broad superloral stripe light yellow; lores dusky, extending backward through the eye; breast canary yellow; abdomen yellowish white; greyish olive on the flanks; under tail coverts with a yellowish tinge; upper mandible blackish; lower mandible whitish; bill strongly hooked; gonys much curved. *Female and young:* Duller above; yellow of throat not so pronounced. Length 5.15–5.50, wing 2.70–2.90, tail 1.75–1.90, culmen .65–.85, depth of bill .55–.65, tarsus .85–.87, toe .80. *Hab.* Maui.

Pl. XXIX., 6607. **103. P. xantho'phrys** ROTHS.

GENUS **PSITTACIROS'TRA** TEMMINCK.

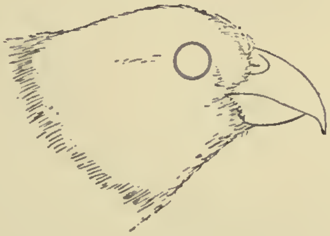

FIG. 11. P. PSITTACEA.

Head and upper neck, all around, a rich light gamboge yellow, sharply defined against the greenish grey of the mantle and olive grey of the chest; rump olive green; tail and primaries dusky brown edged with olive green; olive on the sides and flanks; abdomen and under tail coverts whitish grey; bill and feet pink; upper mandible exceeding the lower usually by about .15. *Female:* Upper parts, including head and neck, uniform olive green; greyish on the neck; under parts greyish white, washed with yellow; under tail coverts white. *Young:* Similar to the female, but more uniform grey above and below, except the abdomen, which is whitish; bill dark. Length 6.30–

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[49] The above characters are sufficient to separate *wilsoni* from its fellows, sub-generically at least, if not entitling it to generic rank.

6.60, wing 3.80–4.00, tail 2.50–2.60, culmen .55–.60, tarsus .87–.90, toe .90–.95. *Hab.* Kauai, Molokai, Lanai, Hawaii, Oahu.[50]

Pl. XXIX., 6612. **104. P. psitta'cea** (GMEL.). **Ou'.**

GENUS **LOXIOI'DES** OUSTALET.

Head and neck to the mantle, and breast to the middle of the body, uniform bright gamboge yellow; back and upper coverts ashy grey, decidedly ashy on the rump; wing coverts, primaries and tail feathers dusky brown or blackish edged with yellowish olive; abdomen and under tail coverts dusky whitish with a bluish cast. *Female:* Similar, but with the yellow showing a brownish wash; with a greenish cast to the under parts. Length about 7.50, wing 3.55–3.75, tail 2.55–265, depth of bill .60, tarsus .95–1.00, toe .75. *Hab.* Hawaii.

105. L. bailleu'i OUST. **Pali'la.**

GENUS **TELESPI'ZA** WILSON.

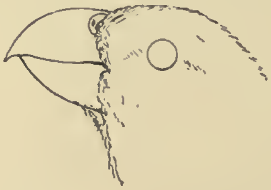

FIG. 12. T. CANTANS.

Head all around, neck and under parts to the middle of the abdomen bright yellow, brightest on the head; back bright olive yellow with varying blackish shaft streaks; rump grey with some olive cast at times; webs of primaries and tail feathers brown; secondaries blackish edged with yellowish olive; wing coverts deep brown broadly edged with yellowish olive; bill horn color. *Immature:* Feathers of the head deep brown with yellowish edges; upper surface with centre of feathers deep brown or blackish edged with light brown; rump uniform brown; tail and primaries brown edged with olive yellow; throat and breast yellow with brown shaft stripes; centre of the abdomen white; sides and under tail coverts brown, or olive brown, and with brown shaft stripes. *Young:* Similar to immature birds, except yellow reduced to the slightest tinge about the head and wings. Length 6.25–6.50, wing 3.25–3.40, tail 2.55–2.60, culmen .65–.70, depth of bill .47–.50, tarsus .95–1.00, toe .95. *Hab.*[51] Laysan.

Pl. XXIX., 8731. **106. T. can'tans**[51] WILSON. **Laysan Finch.**

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[50] In October, 1899, I saw a specimen in the bushes up Moanalua valley which I believe to have been the above species, though of course I cannot be positive of the identity. Since the preparation of the above, Mr. Rothschild (Birds of Laysan, Part III., page 193) has separated the Oahu form from the Hawaii bird, giving the principal differential character as "having the middle of the breast and belly, the feathers of the tibia and under tail coverts whitish; whereas, the adult males of the Hawaii bird "have the under parts olive green merging into whitish only in the middle of the lower abdomen." The name given to "the Honolulu Ou" is *Psittacirostra olivacea*, Roths.

[51] With a good series of birds before me I am unable to separate *cantans*, Wilson, from *flavissima*, Roths. The latter seems to be only fully mature specimens of the former, and in a plumage which requires some time for the individual to assume. Director Wm. T. Brigham also informs me that specimens brought from Laysan and kept in his aviary for a long time passed through several of the intermediate stages on the way from *cantans* to *flavissima* before they were accidentally killed.

GENUS **RHODACANTHIS** ROTHSCHILD.

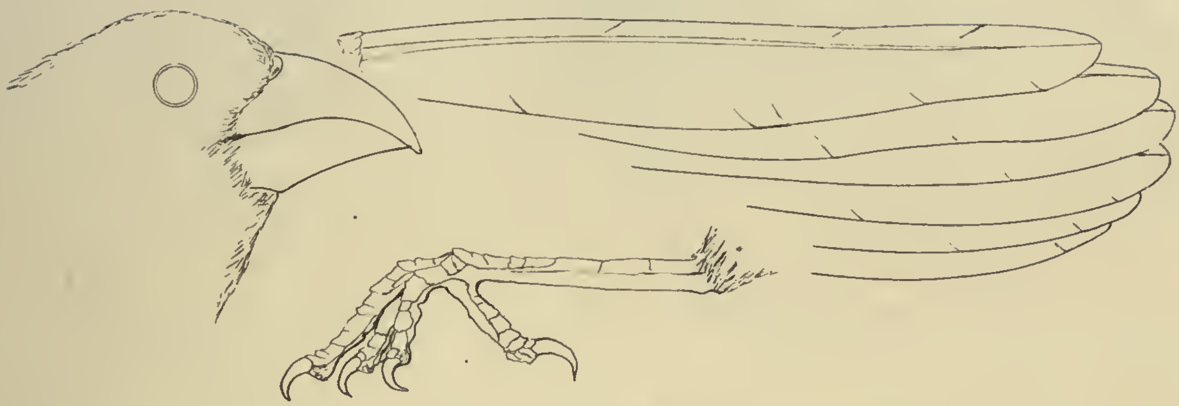

FIG. 13. R. PALM'ERI.

a. Head, throat and under parts throughout rich scarlet orange; breast purer orange tinge; under tail coverts and flanks showing some grey; mantle brown; rump orange brown; tail and wing feathers brown, with some orange brown; wing and tail feathers brown with orange brown edgings to the outer webs; bill bluish grey. *Female:* Above, greenish olive with dark grey bases to the feathers; more olive on the rump and upper tail coverts; tail and wing feathers with olive edges; breast showing grey as the under color, with yellowish olive edges, yellowest on chin and upper breast; centre of the breast whitish with but faint yellowish wash; flanks greenish yellow. *Young:* Similar to females; young males brighter below. Length about 7.50, wing 4.20–4.40, tail 2.90–3.00, culmen .80–.85, depth of bill .58–.61, tarsus 1.00–1.05, toe 1.00. *Hab.* Hawaii.

Pl. XXIX., 6603, 6601. **107. R. palm'eri** ROTHS.

aa. Head, neck and under parts generally apple yellow, brightest and richer on the head and neck, and greener on the under parts; upper parts ashy green, becoming bright green on the lower back, rump and upper tail coverts. Wings and tail dull blackish brown, feathers externally margined with green; bill blue-brown; legs grey; iris brown. Total length about 7.50, culmen .72, wings 3.80, tail 2.50, tarsus 1.00. *Adult female:* Differs from the male in being much greener and duller in color, only the forehead being yellow; the crown similarly colored to the back; under parts dull yellowish green. Palmer obtained a small series in the district of Kona at the same place where *R. palmeri* was first collected. The smaller size and yellow head of the adult male serves to distinguish this species very easily from the much larger *R. palmeri* with its orange red head in the adult male. Neither Wilson nor Perkins met with this bird (Rothschild in Part III., Avifauna of Laysan, etc.). *Hab.* Hawaii.

108. R. flav'iceps ROTHS.

GENUS **CHLO'RIDOPS** WILSON.

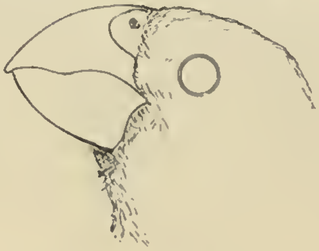

FIG. 14. C. KONA.

Female: Above, decided olive green, more olive on the upper tail coverts, and with dark centres to the feathers of the head, producing a scaled appearance; under parts of the abdomen and flanks yellowish olive; under tail coverts whitish; quills and tail feathers brown with olive edgings on the outer web; bill extremely thick and clumsy. (Male probably brighter?) Length 6.00–6.50, wing 3.30–3.45, culmen .70, depth of bill .70, width of bill .60, tarsus .85–.90, toe .85. *Hab.* Hawaii.

109. C. ko'na WILSON.

FAMILY **MELIPHAG'IDÆ**.—HONEY-EATERS.

Genera.

With no white feathers about the eye; nostrils operculate; first primary about half the length of the second; secondaries three-fourths the length of the wing; tip of the wing formed by the fourth, fifth and sixth primaries. (Sub-family *Meliphaginæ*.)

a. Smaller; wing less than 5.00; tail black or brownish black; with or without pectoral tufts. . . . .(Page 56.) **Moho.**[52]

aa. Larger; wing more than 5.00; tail brown or greenish brown. (Page 58.) **Chætop'tila.**

GENUS **MOHO** LESSON.

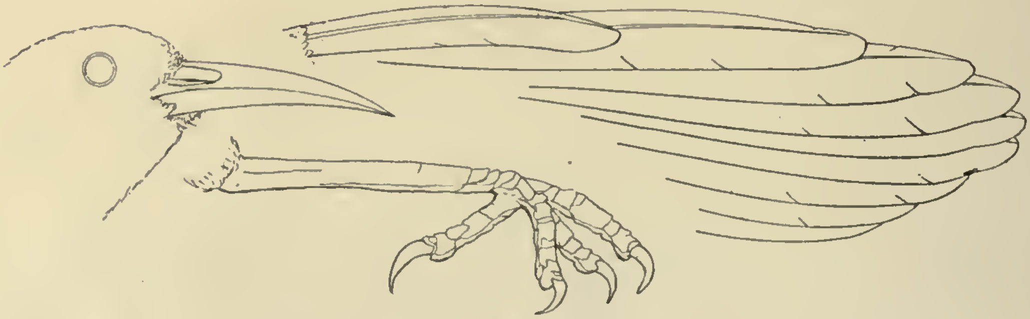

FIG. 15. M. NOBILIS.

a. With no yellow pectoral tufts; tail feathers uniform blackish without any trace of white on the outer pair; crown black with a greyish cast; upper surface brown or brownish black with faint white shaft stripes on the mantle; upper tail coverts rusty brown; wing and tail feathers blackish brown; throat and neck to chest black with white shafts and bars; under wing coverts mostly white; thighs yellow; breast uniform with the back; sides of the body less rusty brown than the upper tail coverts; bill and feet black. *Female:* Similar to male, but smaller. *Young:* Differing from the adult in having the tibiæ blackish instead of yellow, and with the greyish shaft stripe to the feathers of back and breast indistinct or wanting. Length 7.50–9.00 (according to tail), wing 3.70–4.00, tail 3.60–4.25, culmen 1.10–1.15, depth of bill .25, tarsus 1.25–1.35, toe .95. *Hab.* Kauai.

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[52] Since it is doubtful if *Moho* should ever have been set aside, to accord with the Stricklandian code, and since it is certain that by the A. O. U. code *Moho* would stand against *Acrulocercus*, it is preferable to use the former name for this genus.

Pl. XXIX., 5463. **110. M. bracca'tus** (Cassin). **Oo aa.**

aa. With yellow pectoral tufts, and more or less white on the outer pair of tail feathers.

b. With elongated yellow ear tufts, uniform in color with the few yellow feathers under the wing and the under tail coverts; a faint edge of whitish on the outer margin of the outer pair of tail feathers; remainder of tail uniform glossy black, like the primaries; crown and rump black; back, chest and abdomen black, with conspicuous white shafts to the feather; throat black; bill and feet black; central tail feathers with weak shafts; long and plume-like. *Female* similar(?). Length about 11.00, wing 4.55–4.75, tail 5.00–6.25, culmen 1.32, depth of bill .30, tarsus 1.50–1.55, toe 1.05. *Hab.* Molokai.

111. M. bish'opi (Roths.).

bb. Without elongated yellow ear tufts; tail with prominent white tips to the outer feathers.

c. With only the two outer tail feathers with white tips; head, rump, back, wing coverts and lower parts deep black with some gloss; upper mantle, lower part of the abdomen and inner edge of secondaries inclined to umber brown; tufts under the wings and under tail coverts bright golden yellow; primaries and tail feathers black; bill and feet black. *Female:* Similar, but smaller. *Young:* With no yellow beneath the wings. Length ♂ 12.50–10.50 ♀, wing 4.85–4.90, tail 7.50, culmen 1.15, depth of bill .25, tarsus 1.40, toe 1.00. *Hab.* Hawaii.

Pl. XXIX., 5457. **112. M. nob'ilis** (Merrem.). **Oo.**

cc. All the tail feathers, except the middle pair, tipped with white. General color sooty black; tail brown, all tipped as above; centre pair somewhat narrower than the others and gradually diminishing to the apical third of their length into fine hair-like, or filamentous, upturned points; axillæ or under surface of the shoulder white; flanks and under tail coverts bright yellow; bill and legs black. Total length 12 inches, bill 1½, wing 4¾, tail 6¾, tarsus 1½ (Gould). *Hab.* Oahu; rare or extinct. (No specimen in the Museum.)

113. M. apica'lis Gould. **Yellow-tufted Honey-eater.**

GENUS **CHÆTOP'TILA** SCLATER.

Tail greenish brown; feathers of the forehead, crown and back of the neck, with whitish shaft stripe, blackish webs and tipped with olive—black predominating on the crown—most olive on the neck; lores and ear coverts blackish; an indistinct grey superciliary stripe; throat dusky white, washed with yellow; breast dingy white with black stripes; abdomen and under tail coverts with fewer stripes and more olive than the chest; flanks and upper tail coverts ochraceous black with white shafts and terminal spots; primaries and secondaries brown edged with olive; under wing coverts brown. Length about 13.50, wing 5.75, tail 6.65, culmen 1.25, depth of bill .31, width .45, tarsus 1.60, toe 1.15, hallux with claw 1.02. *Hab.* Hawaii; rare or extinct.

Pl. XXX., Frontispiece. **114. C. angustiplu'ma** (PEALE).

FAMILY **SYLVI'IDÆ.**—WARBLERS, ETC.

Genus.

Bill slender, but rather wide and depressed; wing long and flat, about equal to the tail in length, with a very small bastard primary not extending beyond the wing coverts; birds not migratory; no white on the tail (Sub-family *Sylviinæ*); rectal bristles fairly well developed; wing more than 2.70; second primary longer than the fifth; upper parts brownish with greyish cast; a faint buffy white super-loral stripe; outer tail feathers more than .25 shorter than the longest pair.

(Page 58.) **Acroceph'alus.**

GENUS **ACROCEPH'ALUS** NAUMANN.

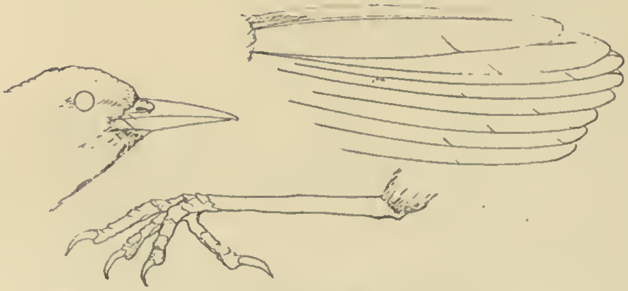

FIG. 16. A. FAMILIARIS.

Upper parts brownish with a greyish cast, greyest on the neck; under parts buffy white including the edge of wing, and a super-loral stripe; wing and tail feathers brownish; feet black; bill horn-brown; nostrils rounded and exposed; sexes similar. *Young* (?). Length about 5.65, wing 2.30–2.40, tail 2.30–2.40, culmen .60, tarsus .75–.90, toe .72, depth of bill .15. *Hab.* Laysan.

Pl. XXVII., 8735. **115. A. familia'ris** ROTHS. **Miller Bird.**

FAMILY **TURDIDÆ.**—THRUSHES, ETC.

Genus.

The young different from the adults, having the under parts spotted; tarsus for the greater part of its length without transverse scutulæ, being booted; bill somewhat depressed, with a few rectal bristles; gonys about one-third the length of the commisure of the beak (Sub-family *Myadestinæ*); inner toe about equal to the hind toe; nostrils exposed and not hidden by bristles, and situated in a wide oval groove; culmen not longer than the hind claw; second primary longer than the secondaries; bill with a distinct sub-terminal notch..............................(Page 59.) **Phæor'nis.**

GENUS **PHÆOR'NIS** SCLATER.

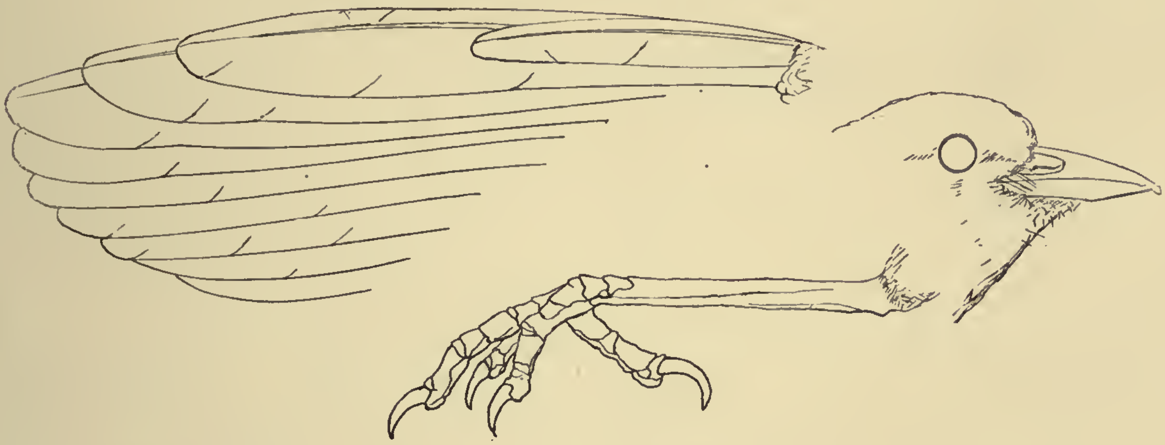

FIG. 17. P. OBSCURA.

a. Uniform in color above, brown or hair-brown, with faint olive wash.

b. Very conspicuous buffy white mark on the outer tail feathers.

c. Wing less than 4.00; feet light flesh-color; above, dull brown with an olive cast, most pronounced on the middle of the rump and mantle; throat and lores bluish grey; chest bluish ash or grey, sometimes mottled with blackish; abdomen and under tail coverts buff-white; outer web of primaries with very dull brown edge; inner web edged so as to form a dull buffy patch at base of feathers; outer tail feathers edged with whitish or fulvous on the inner web; ends of primary coverts blackish, forming a patch. *Young:* Feathers above, brown with broad blackish borders to the tip, and before this a creamy buff, more or less triangular spot; feathers of lower parts ashy brown at the base, then lighter cream color and broadly bordered with blackish brown, these borders blackest and broadest on the breast (Rothschild). Length about 6.15, wing 3.35, tail 2.45, culmen .70, depth of bill .20, width of bill .22, tarsus 1.30, toe .95, gonys .32. *Hab.* Kauai.

Pl. XXVII., 6693. **116. P. palm'eri** ROTHS. **Puaiohi.**

cc. Wing more than 4.00; feet dark colored; above, dull brown with a rusty olive tinge; sides of head and ear coverts tawny, always more or less mottled with rusty and grey; quills blackish, edged externally with rusty olive, which color forms a spot at the base of the inner primaries, below which the blackish tips of the greater wing coverts form a less pronounced spot; inner edge of the wing feathers without buffy patch; outer edge of each primary for almost its entire length rusty; lower parts dull smoky grey in appearance, shading into whitish on the abdomen; tail feathers like back, outer three pairs tipped with white or buffy white, pronounced on the tips and gradually fading into the ground color of the web; feet dark brown. *Female* similar. *Young:* Similar to *P. obscura*, but can be distinguished by the markings on the outer web of primaries, the white of the tail, and the broader bill. Length 7.50–8.50, wing 4.05–4.18, tail 3.20–3.30, culmen .50–.55, depth of bill .22, width of bill .40, tarsus 1.25–1.32, toe .95, gonys .25. *Hab.* Kauai.

Pl. XXVII., 9385. **117. P. myadesti'na** STEJN. **Kamau'.**

bb. With no conspicuous white markings on the outer tail feathers.

d. Wing 3.50–3.75; color lighter below; a distinct black patch near the base of the outer web of inner primaries; above, olive brown with a faint wash of greyish; head darker; primaries and tail feathers brown (quills and webs practically the same color), with the edge of the outer webs rusty or rusty brown; outer web of the inner primaries and the secondaries with a distinct black patch, bordered in front and behind by the rusty edges of the feather; chin and throat pale grey, the grey passing to white on the abdomen; under tail coverts buffy white; wing pattern on the inner web of primaries marked at all ages; no white on outer tail feathers. *Female* similar. *Young:* Similar to allied species, but with the wing pattern on the inner web, no white on the tail, and with the black patch on the outer edge of inner primaries as in adults. Length about 7.00–7.50, wing 3.50–3.75, tail 3.25–3.30, culmen .57–.60, depth of bill .22, width of bill .30, tarsus 1.25–1.30, toe .95, gonys .27. *Hab.* Lanai, Molokai.[53]

Pl. XXVII., 8094, 8096. **118. P. lanaien'sis** WILSON. **Olomau.**

dd. Wing not less than 3.90; color darker below; above, dusky olive brown (fading to hair-brown—Mills specimens); forehead greyer; under parts ash-grey; white on the abdomen and under tail coverts; primaries and tail feathers brown, shaded with dusky olive; quills of tail feathers umber brown above; base of secondaries showing a rusty spot; pattern on the inner web of quills scarcely discernible; bill and feet blackish; no white on the tail feathers. *Female* similar. *Young:* Spotted like young thrushes; each feather above is bordered with blackish, and before the blackish border is a more or less triangular buff spot; the feathers below are buffy white and broadly bordered with blackish brown (Rothschild).

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[53] The form from Molokai should probably be separated as a sub-species. No specimens from Molokai at hand.

Length 6.90–8.00, wing 3.95–4.00, tail 2.85–2.95, culmen .55–.62, depth of bill .22–.25, width of bill .30–.35, tarsus 1.22–1.30, toe .97, gonys .26. *Hab.* Hawaii.

Pl. XXVII., 6615, 9922, 9923. **119. P. obscu'ra** (Gmel.). **Omau.**

aa. Upper parts olive brown, extremities of the feathers much lighter color; tail and wings brown; bill bristled at the base; length 7.50 (Bloxham). Nothing farther is known of this evidently extinct species than is given above, and which is taken from Bloxham's account of the birds secured on the voyage of the *Blonde*, where it is given as "*Turdus sandvicensis* (var.), from Oahu."

120. P. oahuen'sis Wilson & Evans.

KEY TO THE HIGHER ORDERS.

a. All four toes united by a web or membrane....(Page 13.) Order **Steganopodes.**

aa. Hind toe, when present, not connected in any way with the other toes.

b. Nostrils peculiarly tubular, and feet webbed....(Page 10.) Order **Tubinares.**

bb. Nostrils not tubular, or feet not webbed.

c. Feet webbed; cutting edge of the bill dentate; bill as in ducks, geese, etc. (Page 16.) Order **Anseres.**

cc. Cutting edge of the bill not fringed or dentate, or else feet not webbed.

d. Toes distinctly webbed; legs inserted well forward towards the middle of the body, which is held horizontal................(Page 5.) Order **Longipennes.**

dd. Toes not distinctly webbed, or else tarsus longer than the tail.

e. Lower portion of thigh naked, or else bill long and with grooves extending along the sides.

f. Lores naked; hind toe long and inserted on the same level with the middle toe................................(Page 20.) Order **Herodiones.**

ff. Lores feathered; hind toe, when present, never exceeding the length of the lower mandible.

g. Hind toe longer; inserted on a level with middle toe (when long as the under mandible head with frontal shield).....(Page 22.) Order **Paludicolæ.**

gg. Hind toe shorter; if present, inserted more or less above the level of the middle toe............................(Page 24.) Order **Limacolæ.**

ee. Lower portion of the thighs feathered; the bill, if lengthened, not grooved along the sides.

h. Bill strongly hooked, with a distinct naked cere at base of upper mandible.................................(Page 32.) Order **Raptores.**

hh. Bill not strongly hooked, and without naked cere at the base of upper mandible; or, if with a cere, it is soft and swollen in life.

i. Hind toe small and elevated. (Page 30.) Order **Gallinæ.**

ii. Hind toe always well developed and on the same level with the middle one (mainly perching birds).

j. With soft swollen cere at the base of upper mandible. (Page 31.) Order **Columbæ.**

jj. Without a soft swollen cere; toes, three in front, one behind, and on the same level; not united by web, and tarsus equal to or longer than the hind toe with claw............................(Page 34.) Order **Passeres.**

TABLE SHOWING THE DISTRIBUTION OF BIRDS IN THE HAWAIIAN GROUP.

The o denotes its occurrence; † rare or extinct; ? uncertain or questionable record.

NAME.	Hawaii.	Maui.	Lanai.	Molokai.	Oahu.	Kauai.	Niihau.	Laysan.	Lisiansky.	French Frigates.	Midway.	Accidental or wide-ranging.
Larus barrovianus	o	o	..	..	..	o	..	o	..	..	..	o
californicus	..	o	..	..	..	..	..	..	..	..	..	o
delawarensis	..	o	..	o	..	..	..	..	..	..	..	o
franklinii	..	o	..	..	..	..	..	..	..	..	..	o
philadelphia[1]	..	..	..	..	..	o	..	..	..	..	..	o
Sterna fuliginosa	o	o	o	o	o	o	..	o	o	o	o	o
lunata	..	..	..	..	..	..	..	o	o	o	..	o
melanauchen	..	..	..	..	..	o	..	..	..	..	..	o
Anous stolidus	o	..	..	o	o	o	..	o	..	o	..	o
Microanous hawaiiensis	o	..	..	o	o	o	o	o	o	o	o	
Gygis alba kittlitzi	..	..	..	..	..	..	..	o	o	..	..	o
Diomedea nigripes	..	..	..	..	..	o	o	o	o	o	o	o
immutabilis	o	..	..	..	..	..	o	o	o	o	o	o
Æstrelata phæopygia[2]	?	..	..	..	..	o	..	o				
hypoleuca	..	..	..	..	..	..	..	o	..	..	..	o
Bulweria bulweri	o	..	..	..	..	o	..	o	..	o		
Priofinus cuneatus	..	..	..	..	..	o	..	o	o	o		
Puffinus nativitatis	..	..	..	..	..	..	..	o	..	o		
newelli	..	o	..	..	..	o						
Oceanodroma castro[3]	..	..	..	..	..	o	?	..	..	o		
fuliginosa	..	..	..	..	..	..	..	o				
Phalacrocorax plagicus	..	..	..	..	..	..	..	o	..	..	..	o
Phaĕthon rubricauda	o	..	..	..	..	o	o	o				
lepturus	o	o	..	o	o	o	o	..	..	..	..	o
Sula cyanops	..	..	..	..	..	..	..	o	o	o	o	o
piscator	..	..	..	..	o	..	o	o	o	o	o	o
sula	..	..	..	..	..	..	..	..	o	o	o	o
Fregata aquila	o	o	o	o	o	o	o	o	o	o	o	o
Merganser serrator	o	..	..	..	o	..	..	..	..	..	..	o
Anas boscas	..	..	..	..	..	..	..	o	..	..	..	o
wyvilliana	o	o	?	?	o	o						
laysanensis	..	..	..	..	..	..	..	o	?			
Nettion crecca	..	..	..	..	..	..	..	o	..	..	..	o
Querquedula circia	..	..	..	..	..	..	..	o				

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[1] Since the foregoing pages were in print Mr. Rothschild has published a record of the taking of a single specimen of this small gull at Poli-hula lake, on Kauai, on March 15, 1891, by Mr. Palmer. See Avifauna of Laysan, etc., Part III., p. 286.

[2] There seems to be some reason for separating the Hawaiian form from the Galapagos form under the name *Æstrelata phæopygia sandvicensis*, Ridgway. More material is required to thoroughly establish the sub-species.

[3] In the text this species is given as *O. cryptoleucura*. That name has been recently found to be a synonym for *Oceanodroma castro* (Harcourt).

TABLE OF DISTRIBUTION.—*Continued.*

Name.	Hawaii.	Maui.	Lanai.	Molokai.	Oahu.	Kauai.	Niihau.	Laysan.	Lisiansky.	French Frigates.	Midway.	Accidental or wide-ranging.
Charitonetta albeola	..	o	..	..	..	..	..	o	..	..	..	o
Spatula clypeata	o	o	..	..	o	o	..	..	..	..	..	o
Mareca americana	...	..	..	..	..	..	..	o	..	..	..	o
Dafila acuta	o	o	..	o	o	o	..	..	..	..	..	o
Chen hyperboreus	..	o	..	..	..	..	..	o	..	..	..	o
Branta canadensis minima	?	..	..	..	..	o	..	..	..	..	..	o
nigricans	?	o	..	..	..	..	..	o	..	..	..	o
Nesochen sandvicensis	o											
Plegadis guarauna	..	..	..	o	..	o	..	..	..	..	..	o
Demiegretta sacra	..	..	..	..	..	..	..	..	..	..	..	?
Nycticorax nycticorax nævius	o	o	o	o	o	o	..	..	..	..	..	o
Pennula ecaudata	†											
Porzanula palmeri	..	..	..	..	..	..	..	o				
Gallinula sandvicensis	o	o	?	o	o	o	o					
Porphyrio melanotis	..	..	..	..	o							
Fulica alai	o	o	?	?	o	o	..					
Phalaropus lobatus	..	..	..	..	o	..	..	..	..	..	..	o
Crymophilus fulicarius	o	o	..	..	..	..	..	o	..	..	..	o
Himantopus knudseni	o	o	o	o	o	o	..					
Gallinago delicata	?											
Tringa acuminata	..	o	..	..	o	..	..	o	..	..	..	o
americana	..	..	..	..	..	..	..	o	..	..	..	o
maculata	o	..	..	..	..	..	..	..	..	..	..	o
Heteractitis incanus	o	o	o	o	o	o	o	o	o	o	o	o
Limosa lapponica baueri	..	o	..	..	..	o	..	o	..	..	..	o
Calidris arenaria	o	o	..	o	o	o						
Numenius tahitiensis	o	o	..	o	o	o	o	o	..	..	o	o
Charadrius dominicus fulvus	o	o	?	o	o	o	o	o	o	o	o	o
Squatarola squatarola	o	..	..	..	..	..	..	..	..	..	..	o
Arenaria interpres	o	o	?	o	o	o	?	o	o	o	o	o
Lophortyx californica	o	o										
Phasianus torquatus	o	o	..	..	o	o						
versicolor	..	..	..	..	o							
Turtur chinensis	o	o	o	..	..	o						
Circus hudsonius	..	..	..	..	o	..	..	..	..	..	..	o
Buteo solitarius	o											
Asio accipitrinus sandvicensis	o	o	o	o	o	o	o					
Alauda arvensis	..	..	..	..	o							
Corvus hawaiiensis	o											
Chasiempis sclateri	..	..	..	..	..	o						
sandvicensis	o											
gayi	..	..	..	..	o							
Acridotheres tristis	o	o	o	o	o	o						
Passer domesticus	o	..	..	..	o							
Carpodacus mexicanus obscurus	o	o	..	o	o							
Munia nisoria	o	o	..	..	o							
Drepanis pacifica	†											
Drepanorhamphus funerea	..	..	..	o								
Vestiaria coccinea	o	o	o	o	o	o						
Palmeria dolei	..	o	..	o								

TABLE OF DISTRIBUTION.—*Continued.*

NAME.	Hawaii.	Maui.	Lanai.	Molokai.	Oahu.	Kauai.	Niihau.	Laysan.	Lisiansky.	French Frigates.	Midway.	Accidental or wide-ranging.
Himatione sanguinea	o	o	o	o	o	o						
freethi	..	..	..	..	..	..	..	o				
Ciridops anna	†											
Chlorodrepanis stejnegeri	..	..	..	..	..	o						
chloridoides	..	..	o									
wilsoni	..	o										
kalaana	..	..	..	o								
chloris	..	..	..	..	o							
virens	o											
parva	..	..	..	..	..	o						
Viridonia sagittirostris	o											
Oreomyza bairdi	..	..	..	..	..	o						
mana	o											
montana	..	..	o									
maculata	..	..	..	..	o							
newtoni	..	o										
flammea	..	..	..	o								
Loxops coccinea	o											
ochracea	..	o										
rufa	..	..	..	..	†							
cæruleirostris	..	..	..	..	..	o						
Hemignathus lichtensteini	..	..	..	..	†							
obscurus	o											
procerus	..	..	..	..	..	o						
lanaiensis	..	..	o									
Heterorhynchus affinis	..	o										
hanapepe	..	..	..	..	..	o						
lucidus	..	..	..	..	†							
wilsoni	o											
Pseudonestor xanthophrys	..	o										
Psittacirostra olivacea[4]	..	..	..	..	o							
psittacea	o	o	?	o	..	o						
Loxioides bailleui	o											
Telespiza cantans	..	..	..	..	..	..	..	o				
Rhodacanthis palmeri	o											
flaviceps	o											
Chloridops kona	o											
Moho braccatus	..	..	..	..	..	o						
bishopi	..	..	..	o								
nobilis	o											
apicalis	..	..	..	..	†							
Chætoptila angustipluma	†											
Acrocephalus familiaris	..	..	..	..	..	..	..	o				
Phæornis palmeri	..	..	..	..	..	o						
myadestina	..	..	..	..	..	o						
lanaiensis	..	..	o									
obscura	o											
oahuensis		..	..	..	†							

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[4] The addition of the new Ou to the list brings the total number of species of Hawaiian birds up to 132.

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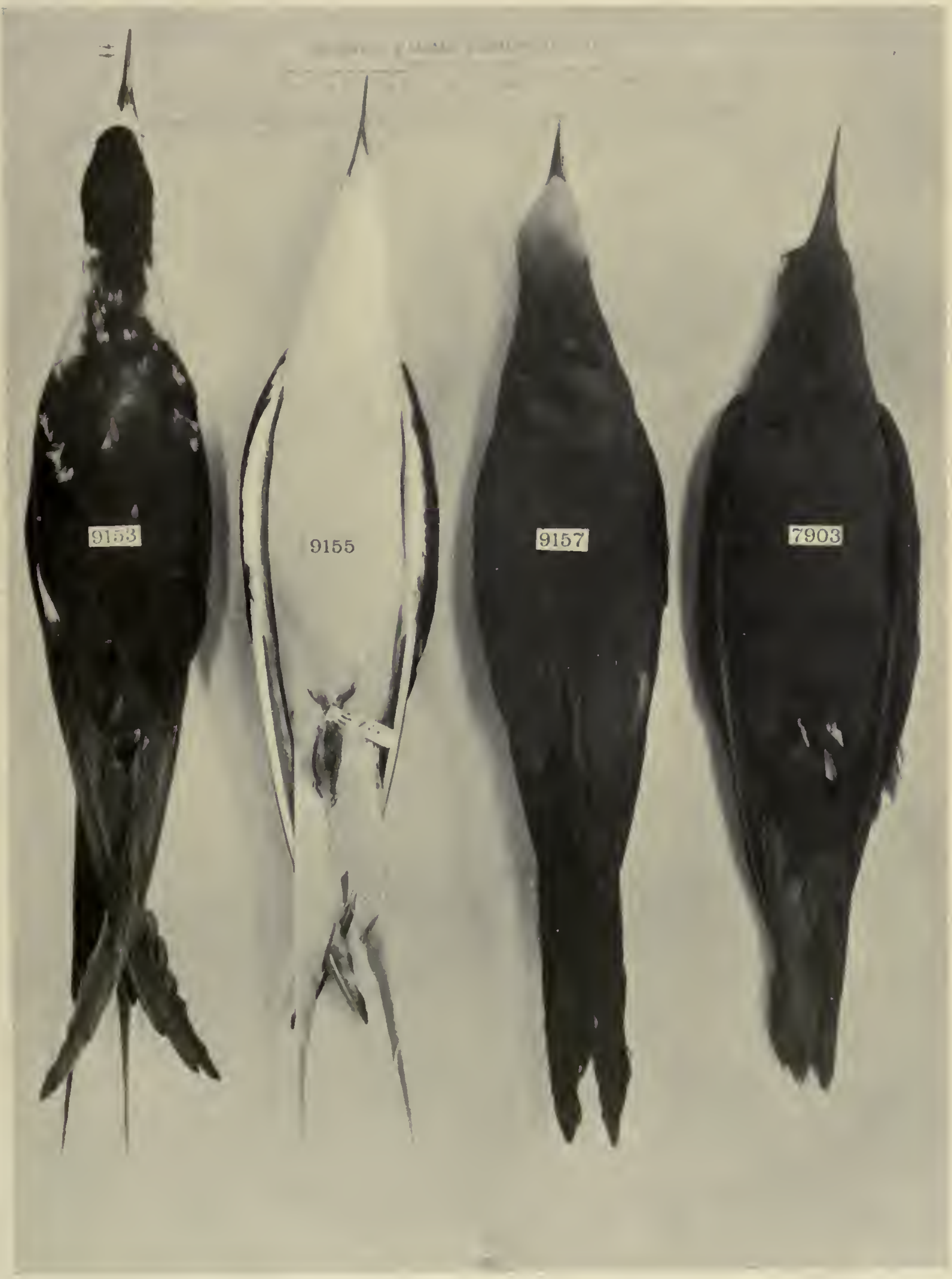

9153, 9155, Sterna fuliginosa.

9157, 7903, Anous stolidus.

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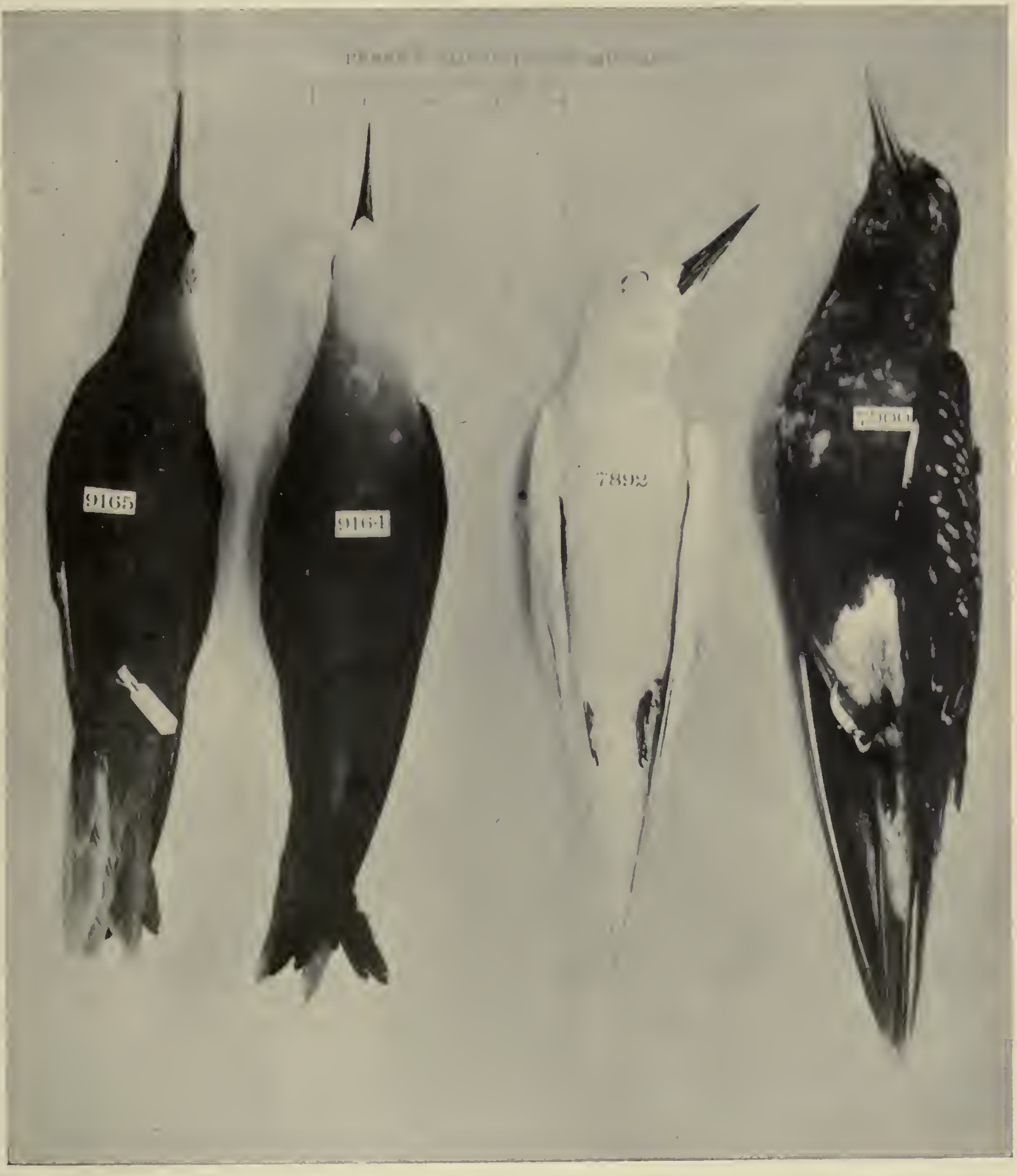
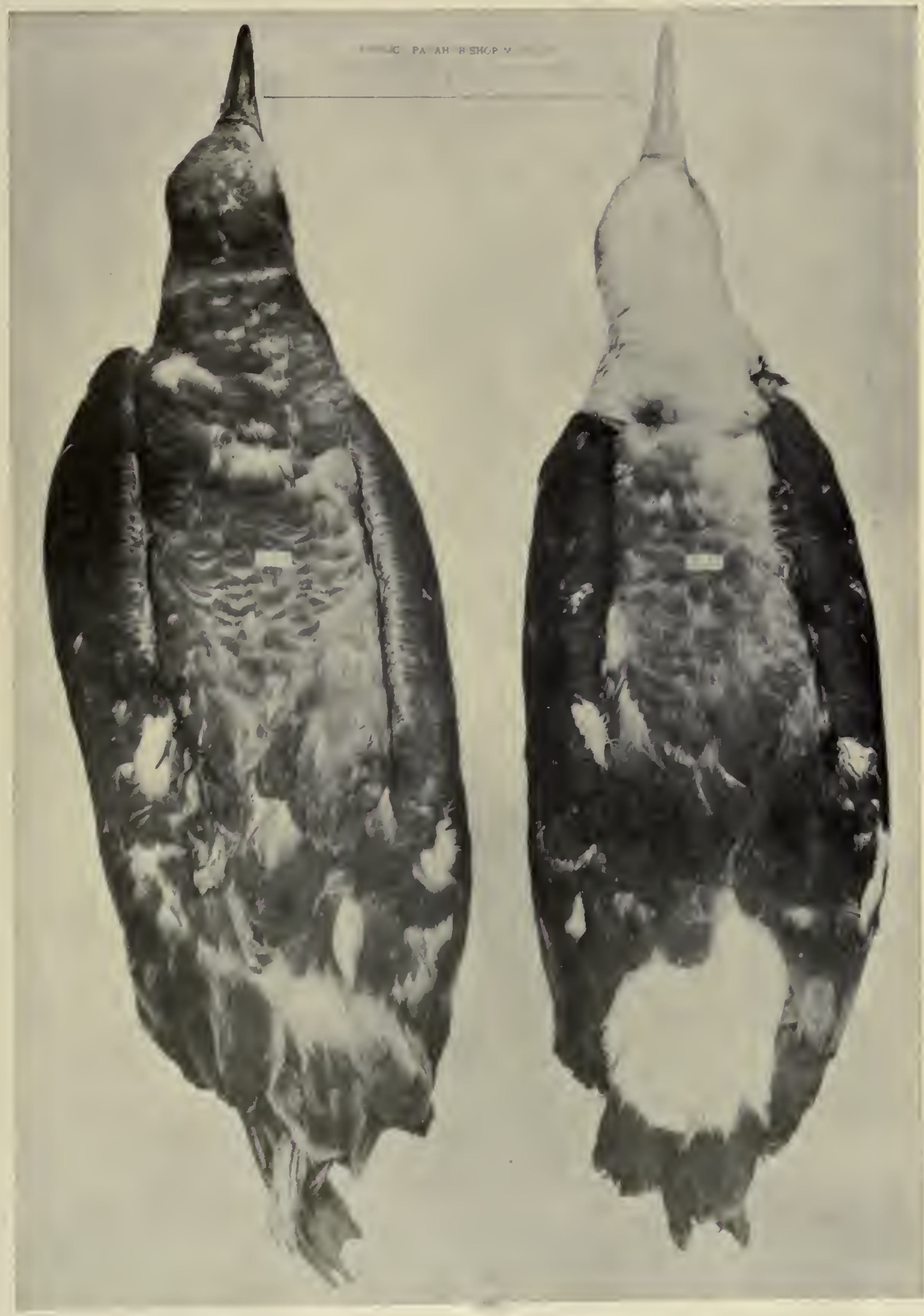
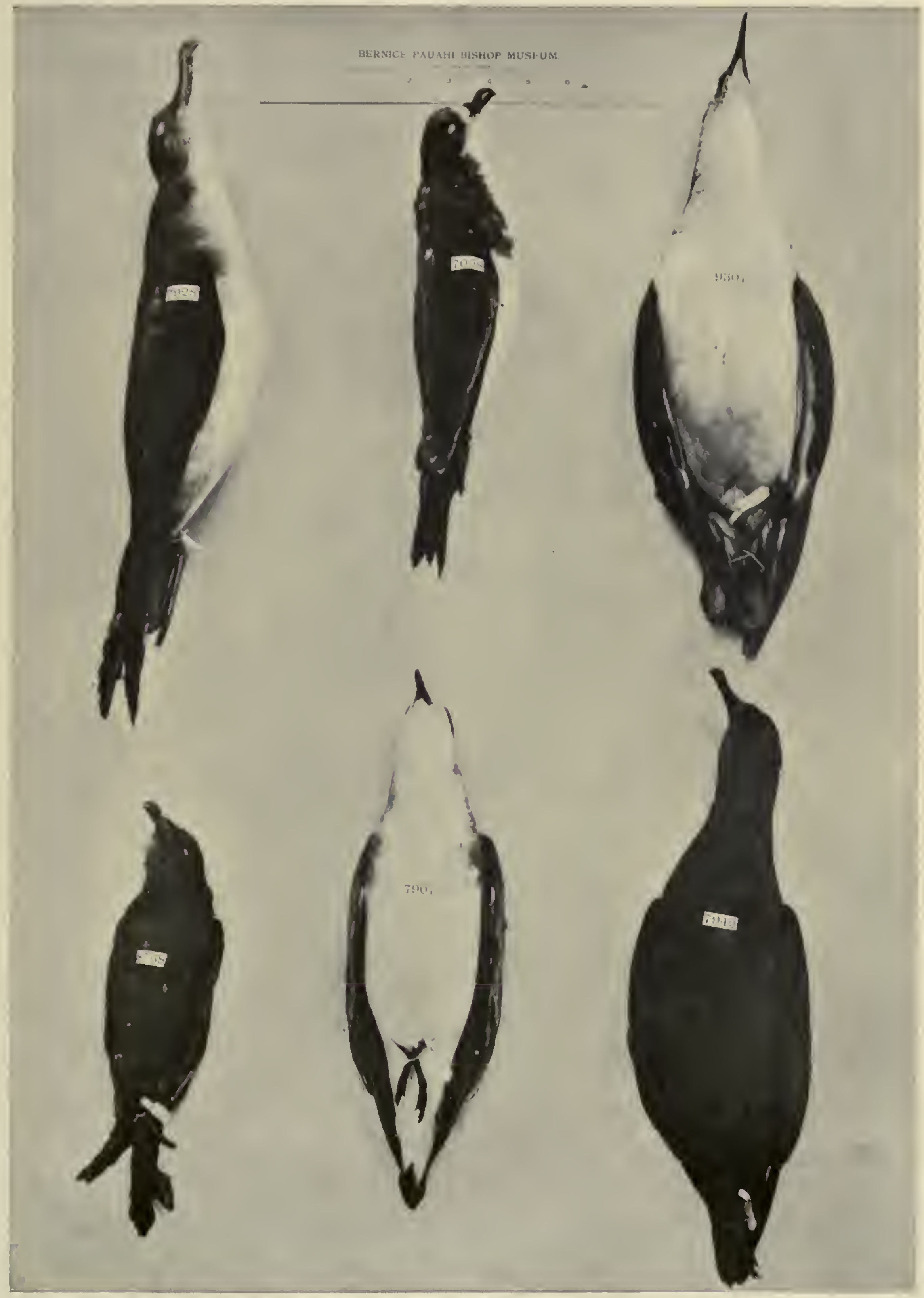


9164, 9165, Microanous hawaiiensis.   7892, Gygis alba kittlitzi.   7900, Anous stolidus.



8742, Diomedea nigripes.

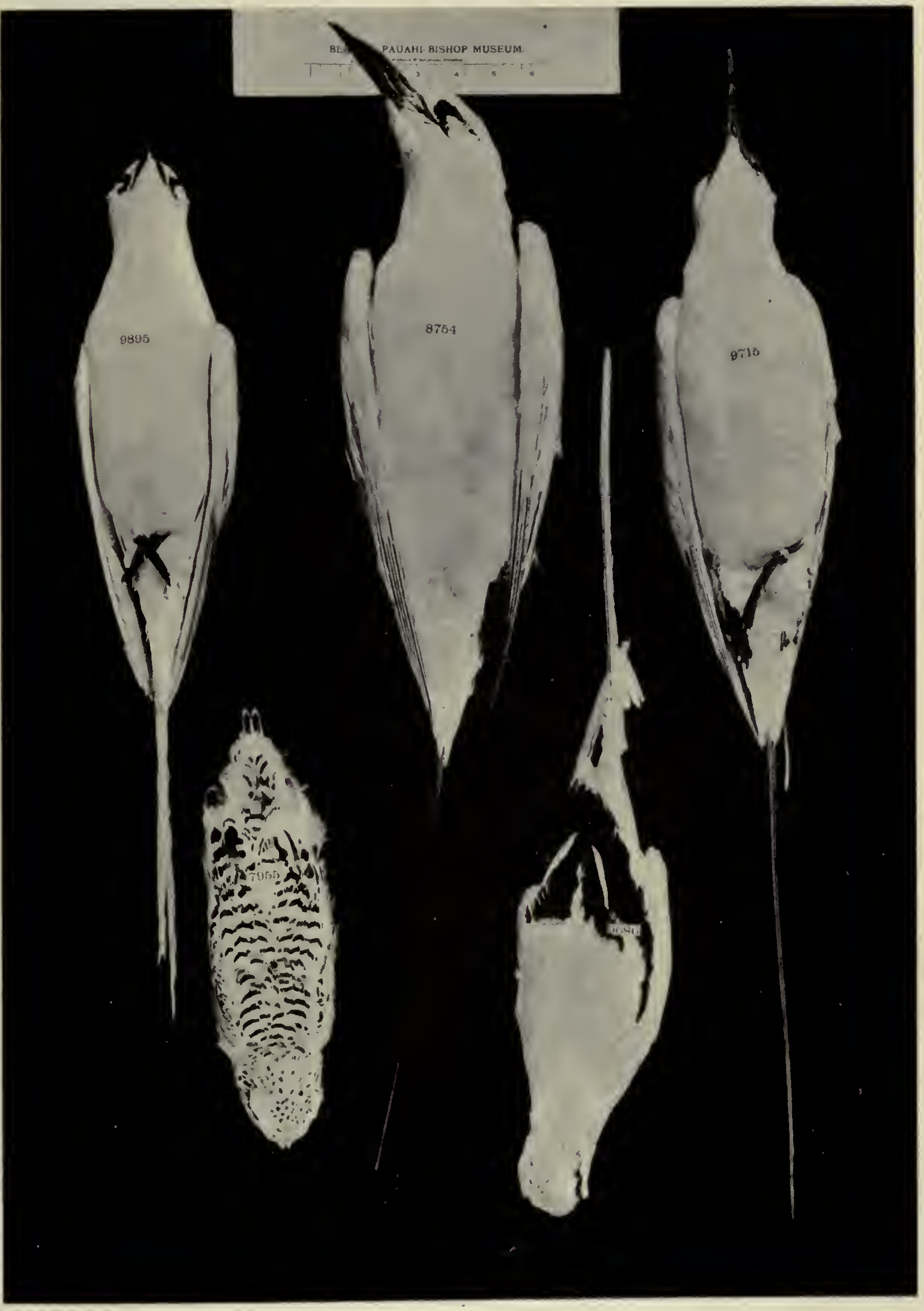
8746, Diomedea immutabilis.



7928, Priofinus cuneatus.
8768, Bulweria bulweri.

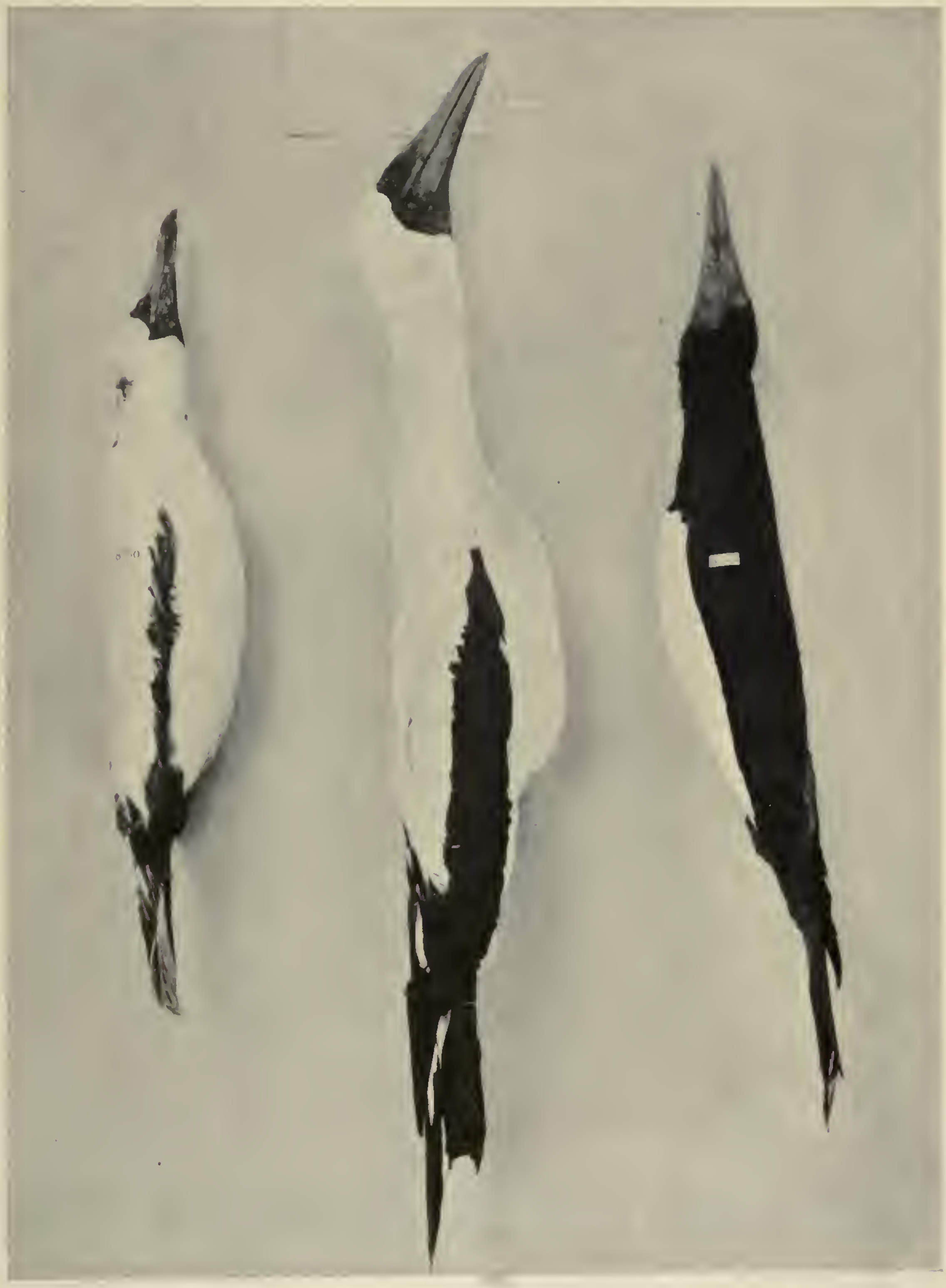
7008, 7907, Æstrelata hypoleuca.

9307, Puffinus newelli.
7942, Puffinus nativitatis.



9895, 9896, 7955, Phaëthon lepturus.

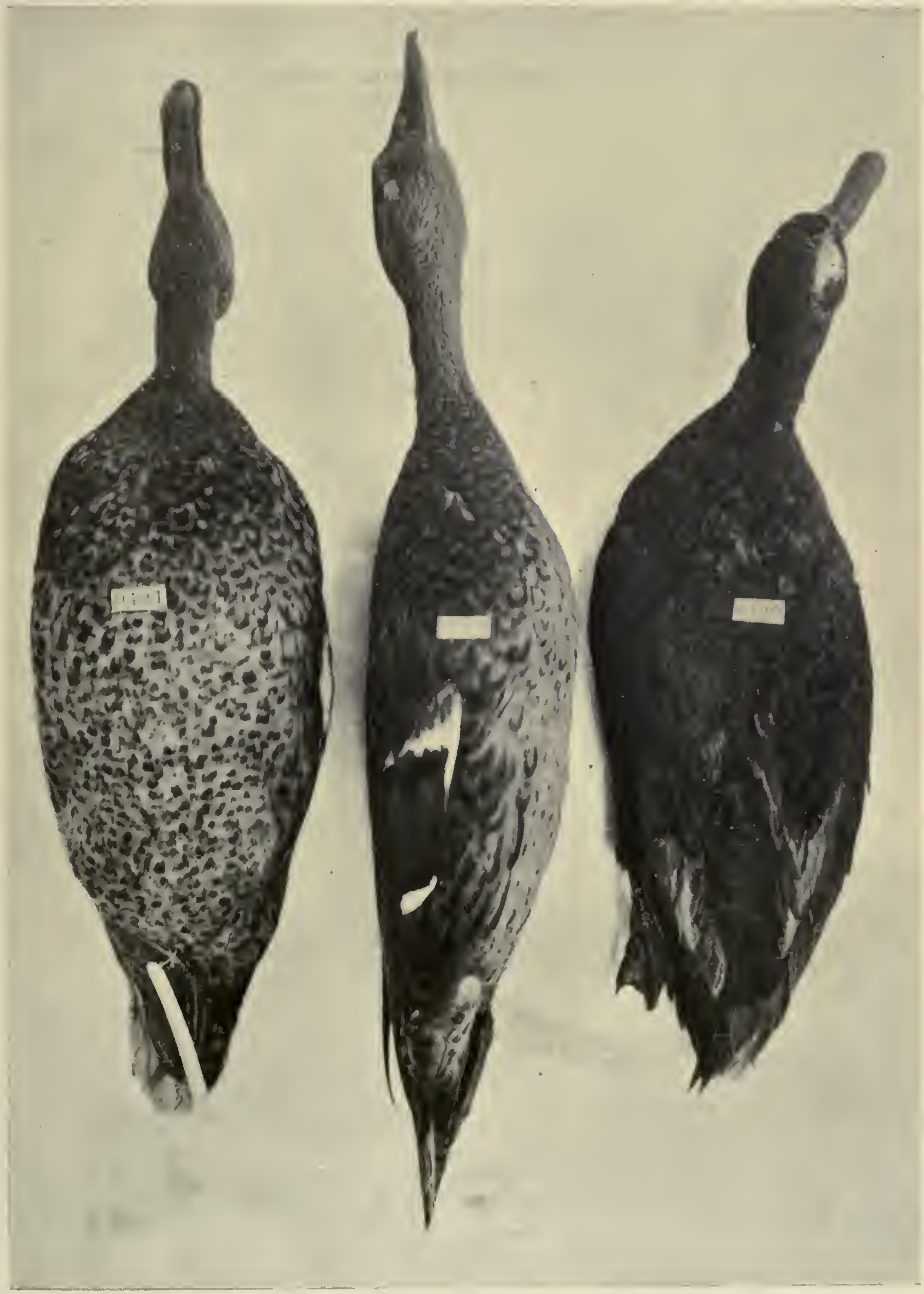
8754, 9715, Phaëthon rubricauda.



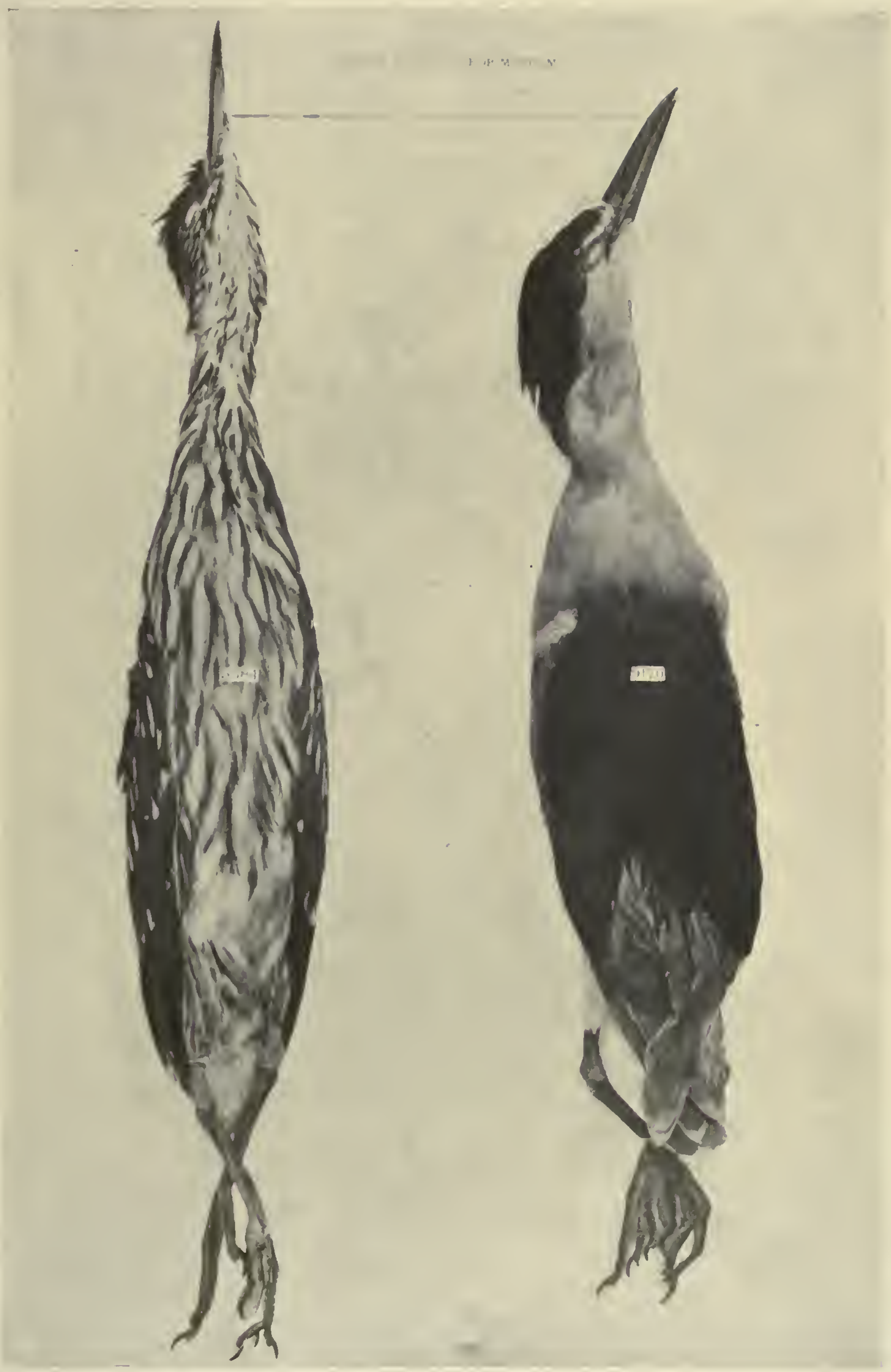
8750, Sula piscator.

7933, Sula cyanops.

8752, Sula sula.

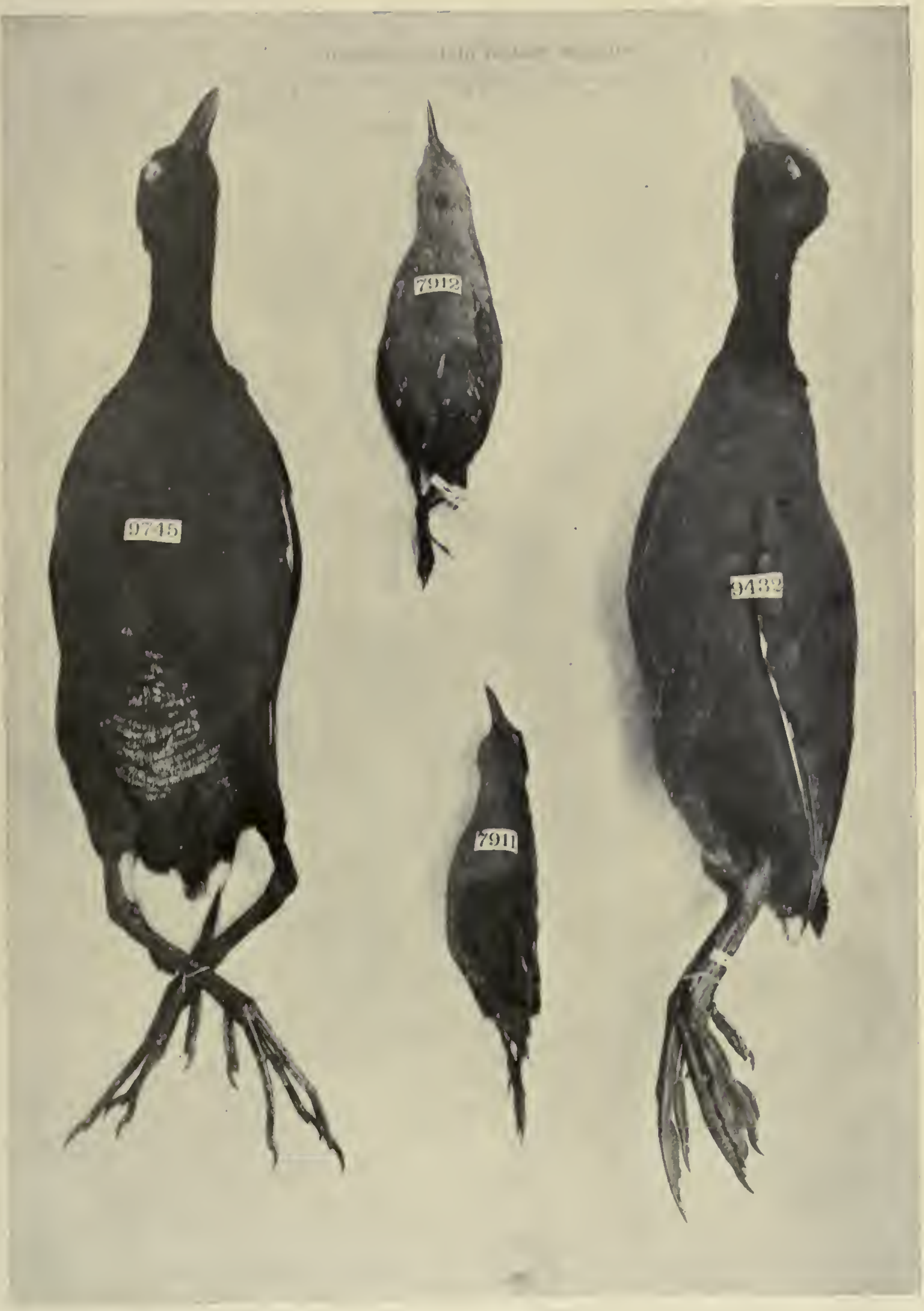


9124, 9168, Anas wyvilliana. 8745, Anas laysanensis.

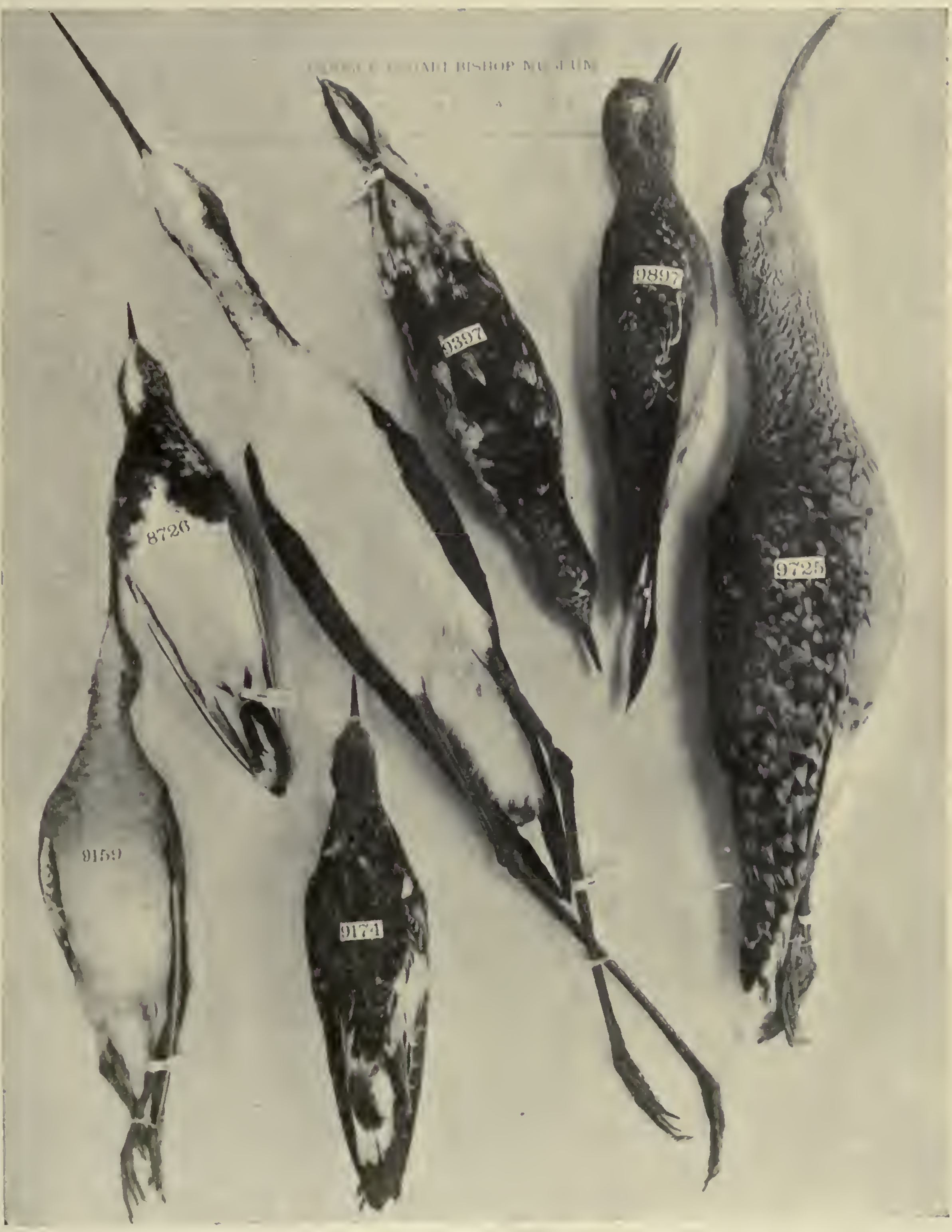


5584(juv.). 9170(♂). Nycticorax nycticorax naevius.

Plate XXIV.



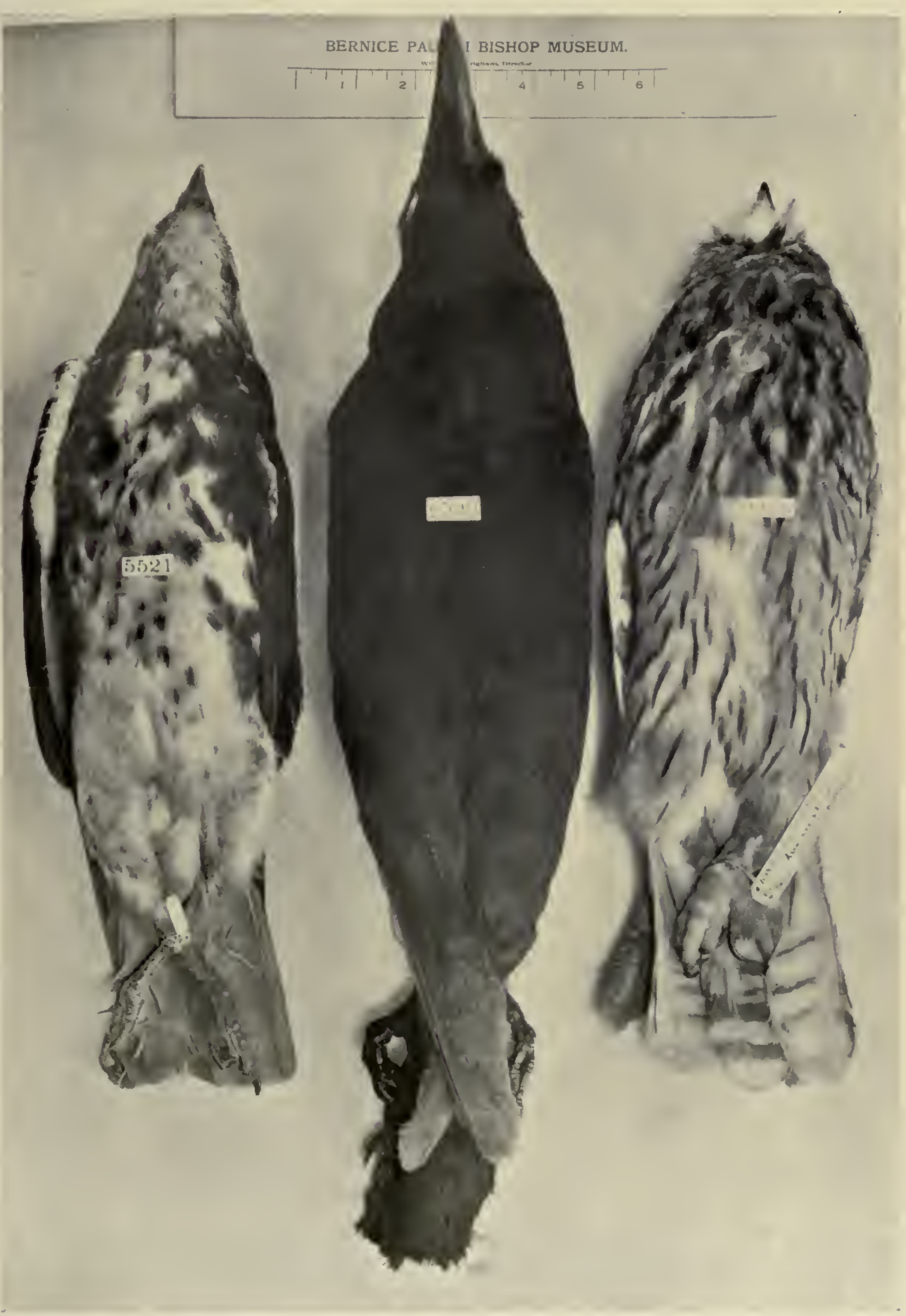
9745, Gallinula sandvicensis. 7911, 7912, Porzanula palmeri. 9432, Fulica alai.



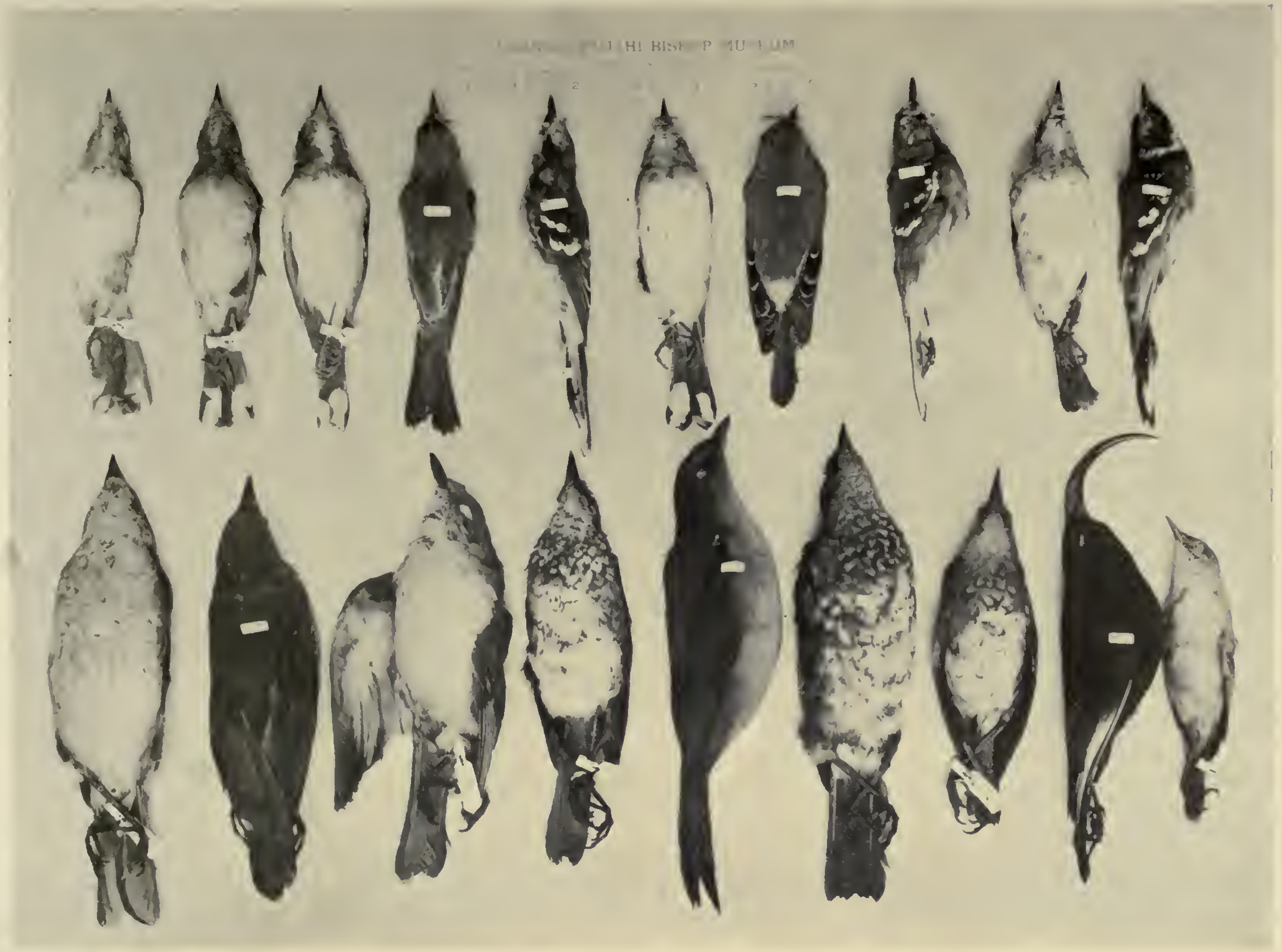
9159, Heteractitis incanus.
8726, 9174, Arenaria interpres.

9429, Himantopus knudseni.

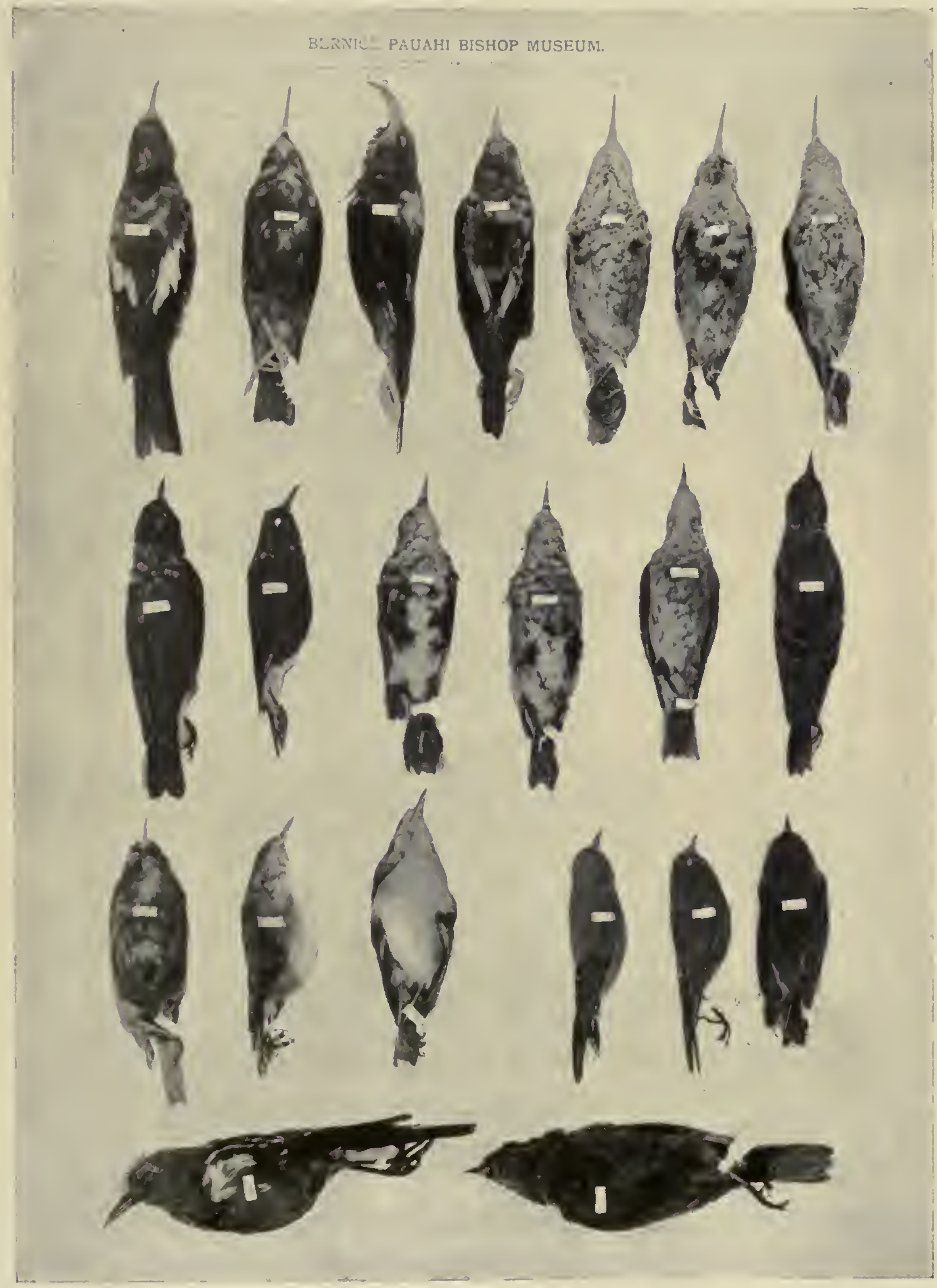
9397, 9897, Charadrius dominicus fulvus.
9725, Numenius tahitiensis.



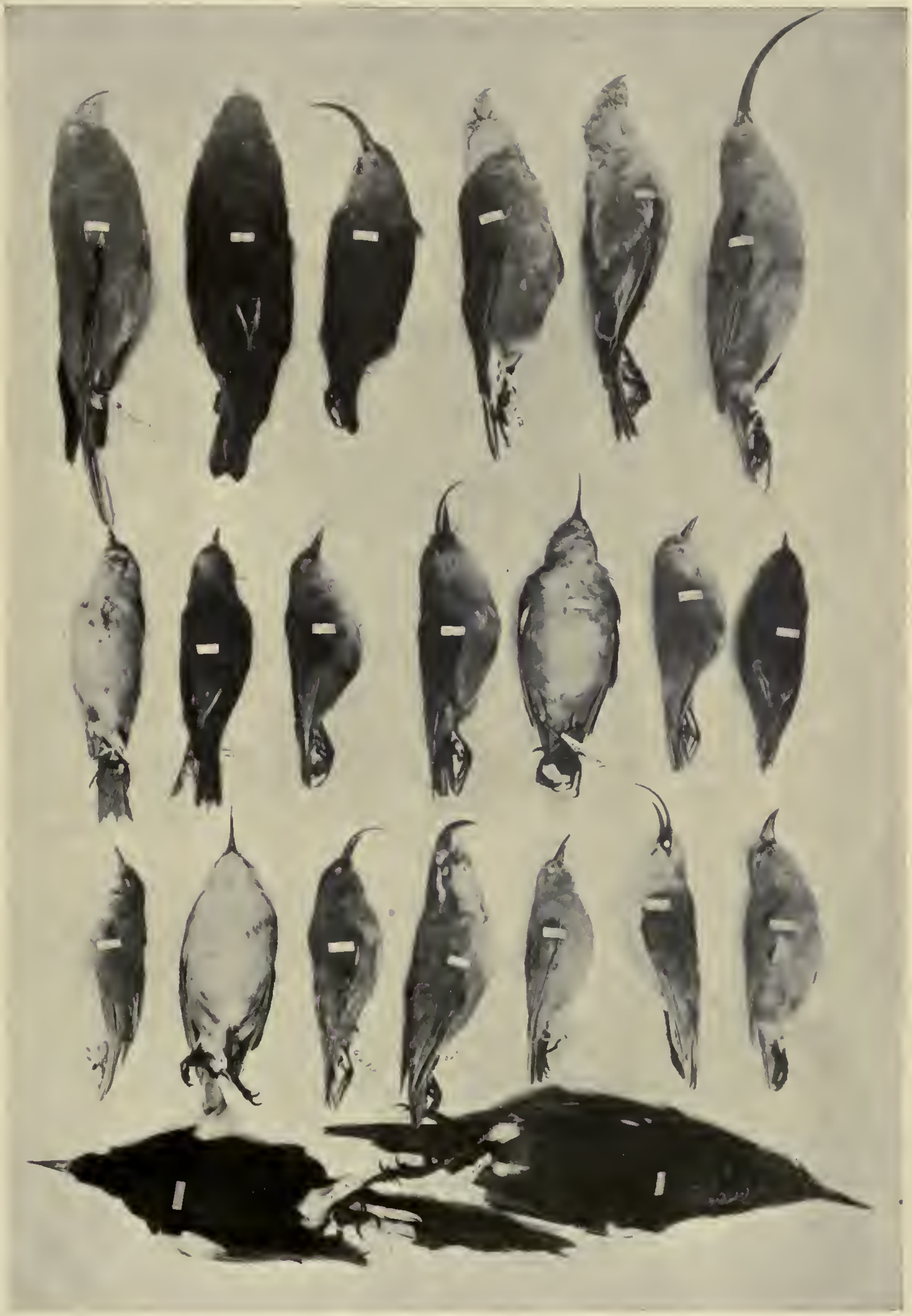
5521, Buteo solitarius. 6599, Corvus hawaiiensis. 9835, Asio accipitrinus sandvicensis.



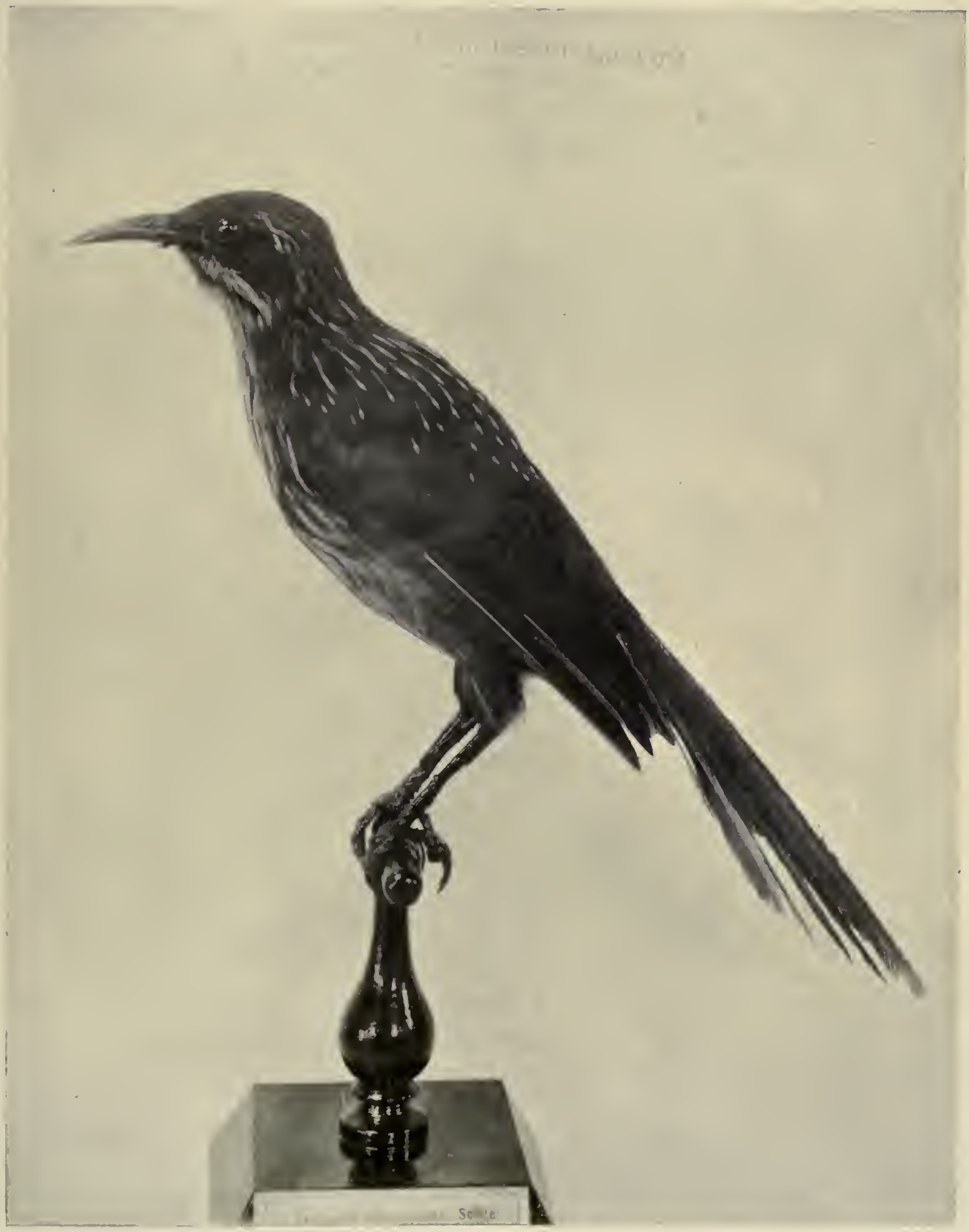
9252, 9258, 9255, 9259, 9260, 9467, Chasiempis gayi; 6657, 9410, C. sclateri; 9923, 9924. C. sandvicensis.
9385, Phæornis myadestina; 9922, 9923, P. obscura; 6615, 8094, 8096, P. lanaiensis; 6693, P. palmeri.
6696, Drepanorhamphus funerea. 8735, Acrocephalus familiaris.



9792, 9342, 9338, 9333, 9348, 9340, 9899, Vestiaria coccinea.
7996, 9803, 9322, 9898, 9309, 9324, Himatione sanguinea.
6681, 8089, 8088, Oreomyza flammea. 6638, Loxops ochracea; 6648, 6642, L. coccinea.
6595, 6596, Palmeria dolei.



6603, 6601, Rhodocanthis palmeri. 8130, Hemignathus procerus. 6612, Psittacirostris psittacea. 8731, Telespiza cantans.
9421, Hemignathus obscurus.
9353, 9361, Loxops cæruleirostris. 6664, Oreomyza mana, 6632, 6630, Heterorhynchus wilsoni. 6684, 6685, O. newtoni.
9402, Oreomyza bairdi. 6633, 6636, Heterorhynchus hanapepe. 6607, Pseudonestor xanthrophrys. 9370, Chlorodrepanis parva.
6620, Heterorhynchus affinis. 9396, C. stejnegeri.
5457, Moho nobilis. 5463, Moho braccatus.



Chætoptila angustipluma.

STONE IMPLEMENTS AND STONE WORK

OF THE

ANCIENT HAWAIIANS.

BY WILLIAM T. BRIGHAM, A.M.

Memoirs of the Bernice Pauahi Bishop Museum.

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[333]

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PREFACE.

In selecting the Stone Implements of the Ancient Hawaiians for the subject of the next chapter of what I had some years since intended should be a history of Hawaii, or rather of the Hawaiians before the advent of other and very different racial influences, it may be fair to explain to my readers, almost at the start, my method in this fragmentary edition of such information about old Hawaii and its customs as I have been able to gather during the past thirty-six years. And here I must be pardoned for thrusting a personality into what I greatly desire to make a clear and impersonal statement of facts.

When I came to these islands a young man full of enthusiasm, fresh from the teachings of Agassiz, Gray, Wyman and Cooke, eager to study nature in all her aspects, unbiased by theory, only anxious to learn, I found a land where traces of a native civilization were not all effaced. The American Mission had labored a little more than forty years and the results of their work were still vigorous: the missionary homes still existed, oases in the outlying districts, where I could talk with venerable men and women who had landed in 1820 when the young son and successor of Kamehameha had cast aside all that his ancestors had held sacred in religion, and was not yet ready to assume new responsibilities,—indeed he hardly gave much thought to the great change that was impending. One era was at an end, another was on the threshold. Hitherto intercourse with foreigners had but little modified the native ways of living. There had been no interruption of the ancient worship although it had been for years falling into mild decay. The admirable unwritten system of law regarding land tenure, water rights, fishing privileges, and the stern but generally beneficial kapu were almost unimpaired, and that little band of missionaries that went like Joshua's spies to view the land, and whose story is so charmingly told in Ellis' *Tour of Hawaii*, found people and things much the same as did the wrecked Spaniards when they knelt on the Hawaiian beach three centuries before.

I never had the pleasure of meeting William Ellis, but I have corresponded with him. I have met and lived with most of the other early missionaries, and if they were perhaps more anxious to remove those obstacles to eternal health which threatened the interesting people they had come to save, than to study the past history and work connected so intimately with what they considered a fallen state, their desires were sincere and unselfish, and they were always ready to place their journals at my disposal and to answer questions which must at times have seemed to them almost idle.

Other sources of information, now closed forever, were then open to the traveler among the Hawaiians. In the remote valleys the sound of the kapa beaters still echoed from the pali, and the ancient fabric was still worn to some extent. I have gone to rest in a grass house by the light of a stone lamp filled with kukui oil, after my native hosts and I had conversed by the light of the more primitive string of kukui nuts. I had for my guide on the island of Molokai a man who had officiated as priest in the native temple whose ruins he was explaining to me. Mateo Kekuanaoa, the father of two kings, and the most intelligent native I ever met; John Ii, Charles Kanaina (father of King

Lunalilo), King Kamehameha V., were all living and willing to contribute to the notebooks I was filling more with a desire of gaining and retaining information than with any view of future publication. Many humbler contributors added to the store when in mountain journeys they wrote for me the names they all then knew of bird or plant or place.

For years these notes were useless although they came back with me to these islands in 1888, but when a few years ago I expected to leave the Hawaiian group forever, I destroyed all that I could lay hand upon as useless baggage in my proposed wanderings. That any escaped was due to the change of plans before I had time to read them all through before consigning them to the fire. From this examination they are still fresh in my memory although it is quite possible that the details might have been more complete had the originals been still before me.

From these sources more than from the voyagers, I shall draw in the proposed sketches of the Hawaiians. I have left untold the tiresome accounts of battles, and I have been so unorthodox an historian as to care very little for thronal succession, if this term can be used where the kings had not even a stool to sit upon, or for the genealogies, for I have seen them falsified to satisfy ambition. I have already published an account of the curious Feather Work of the Hawaiians and I now take up the Stone Work, intending to continue the series with Wood Work, Mats and Baskets, House Building, Food and Cookery, Games and Sports, Warfare, Dress and Ornament, Religion, Kapa Making, Cord and Netting, Fisheries, Canoes and Voyages, Medicine, Chronology, Water Rights, Land Tenure and Kapu. These chapters are partly in order and will be presented as material on hand seems sufficient, and not necessarily in the above sequence.

In this chapter I have endeavored to illustrate all the genuine old Hawaiian implements, but constantly in the course of writing new examples have come to me and I cannot suppose that I have encompassed all within the limits of these few pages. It has been an object with me in all this work to present to those who cannot examine the collections in this Museum as clear an idea as possible of what they comprise, and as this must be rather in the nature of material for farther study and comparison, I have not encumbered my pages with many references to other works or parallel examples, which might exhibit the number of books on kindred subjects I may have read, but would add little to a knowledge of these Hawaiian matters. Where the material exists in this Museum, or is familiar to me in other museums, for comparison between Hawaiian and other Polynesian examples I have briefly called attention to the divergence or parallelism, but I have refrained, as far as possible, from mere conjectural relationships as proving common derivation, preferring to reserve such discussion until all the evidence at my command in all the departments of this series has been fairly presented.

ALAMAKANI, October 26, 1901.

STONE IMPLEMENTS OF THE ANCIENT HAWAIIANS.

A chapter treating also of the ancient Stone Work, Sculpture and such remains as are at present known either in Museums abroad or on these islands by **William T. Brigham, A.M.,** *Director of the Bernice Fauahi Bishop Museum.*

IN the Pacific Region it is not necessary to discuss the tools of primitive man: the first known inhabitants of the Pacific islands were many thousand years removed from primitive man, and the delicate questions of tertiary or early quaternary remains may be wholly eliminated. We need not, even for convenience, divide the remains of tools used here into stone, bronze or iron periods. There were no such divisions. Neither iron, copper, nor tin was accessible to the islanders, and from the time they landed on the bits of land scattered through this ocean, whether it be five or twenty centuries ago, they used wood, stone, bone or shell for the purposes where modern civilized man uses the metals or pottery, and this use was universal until little more than a century ago when iron and foreign tools were introduced here and there among the islands. Even on the Hawaiian islands metal tools were far from common in the middle of the last century.*

If in this region there was a counterpart to the fabled Atlantis of the lesser ocean, in the diluvium that removed its possible inhabitants all their work perished with them and the little islands which perchance serve as gravestones to the lost continent are unmarked by any inscription. The architectural or sculptured remains today found on Rapanui, Tonga, the Marianas and elsewhere are the work of people not remote from the present or historic inhabitants. There are tools of rude form and careless workmanship from the Pacific islands; forms that unconnected with their more modern representatives would puzzle the antiquarian, but there is nothing truly in the nature of incunabula.

If then the mystery of the birth of primitive implements is not to be approached on these islands; if the oldest of the tools cannot boast an age of more than twenty centuries, modern indeed in the history of the human race, what have we left? Simply the rude implements of an intelligent people who had arrived at a certain stage of civilization when they left their home and sought another in the Pacific. What they had formerly must have been greatly modified by the new environment, but in their

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*In 1850 Rev. Mr. Forbes speaking of his district of Kealakeakua said, "Axes are very rare........There is not a native carpenter who owns a set of tools, to my knowledge on this island [Hawaii], the population of which is 30,000 or more. Here and there one owns a saw and an adze; rarely any however except canoe diggers, and the tools they have usually belong to some chief for whom they work." Rev. H. T. Cheever, *The Island World of the Pacific*, p. 221, New York, 1851.

rude tools and methods perhaps is hidden the most definite clue to the origin of the Pacific immigrants, but this will not here be discussed for the space at our disposal is otherwise bespoken. Of all that remains stone is the most durable material but with all its hardness it bears the imprint of human hands as the hard bone yields to the softer muscle, and some one may take these stone records, add to them the other works and customs of the ancient Hawaiians and perhaps solve the enigma of their origin.

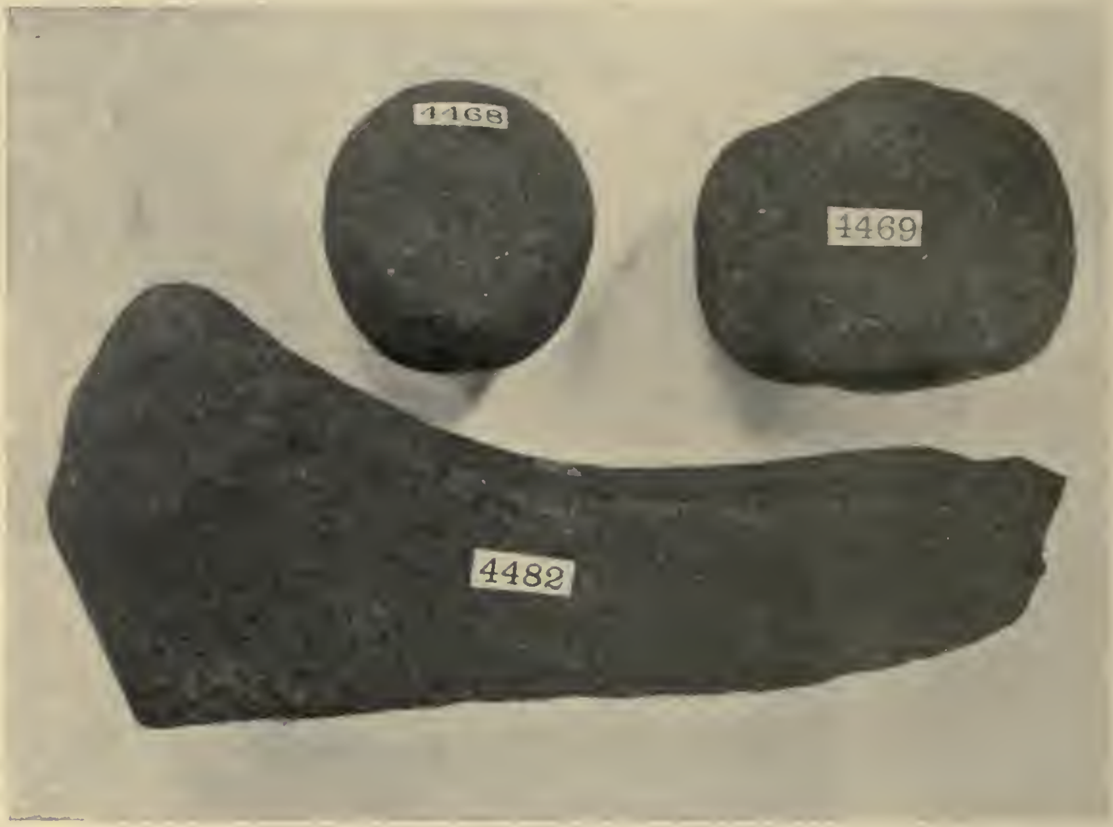

FIG. I. HAWAIIAN STONE HAMMERS.

At present too little is known of the archaic languages as well as customs of the encircling nations or peoples, at the time of the first irruption of the ancestors of the Pacific islanders, to study the problem with profit.

How much memory of a previous civilization the Pacific immigrants brought with them we may never discover: certainly they could not have brought much in the way of household goods, and from what we know of their early voyages the bulk of their cargo must have been food. Tradition on all the groups points definitely to the arrival of the first settlers in canoes; the more recent immigration to New Zealand even preserves the names of the canoes which were later transferred to the tribes springing from the crews. On landing, a waterworn log, such as may be found on most beaches, would perhaps be the first implement used in rolling the heavy canoe ashore. The presence of a canoe argues the possession of cutting tools and of considerable skill in their use, but if any were brought with them these must in time have worn out, and new ones were to be provided if the newcomers were not to fall back in their civilization. Axes were perhaps the first tools needed for we may believe that there were no hostile tribes to drive from most of the islands, and we know that there were no dangerous animals to exterminate. Shelter and the simplest wants of camp life require the axe and hammer. To make an axe a hammer is needed and a fragment of stone serves this purpose better than a more civilized man can understand until he has seen a pebble in a deft hand shape an axe, a pestle or a dish. One fragment is doubtless more convenient than another and a rounded form easily held in the hand has been selected by most primitive people. The Maori of New Zealand twisted a withe around the stone to make a handle (No. 1539, Fig. 2) and the Australian fastened the stone to a simple handle by means of a very tenacious gum (No. 1922, Fig. 2), but the Hawaiian did very good work with the handle Nature has provided in his strong right arm. Now as the actual priority of many of the simple stone implements must be simply a matter of conjecture, I prefer to leave to everyone including myself, full liberty to arrange their descriptions in the most convenient order without prejudice to any theory of sequence.

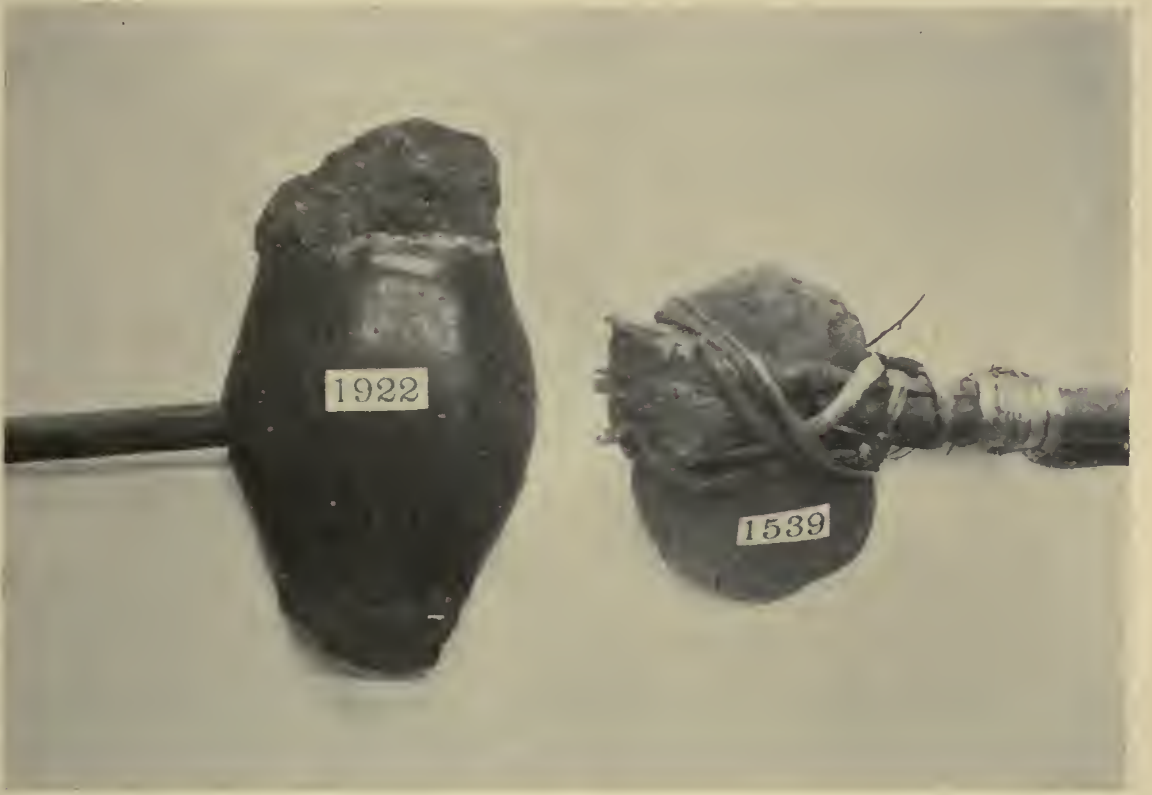

FIG. 2. AUSTRALIAN (1922) AND MAORI (1539) HAMMERS.

Hammers.—Taking first then the hammers as the most simple, least artificial, and perhaps for that reason what we have fewest specimens of in our museums, we might perhaps with the conceit of modern civilization ask what people without nails needed hammers for. Perhaps, the earliest use was to drive a stake for which a smooth stone of rounded shape was more convenient than a rough fragment of stone, as any man who has ever camped out knows very well. Other stones must be split and chipped to form axes, and very early in the history of the human race it was found that a sea-worn pebble was a suitable tool to knap flint or chip clinkstone. Coconuts* in these tropical regions must be opened in the skilful way that every old native well knows lest the precious liquid be spilled; kukui nuts must be cracked without bruising the kernel which is to be used for a candle; the bark of the shrubs used in making first strings, afterwards *kapa* or bark cloth must be beaten;† then when the wooden bowls and dishes so common among the Hawaiians cracked or were broken, little pegs (which were indeed nails) must be carefully hammered into the breach; in the basket work

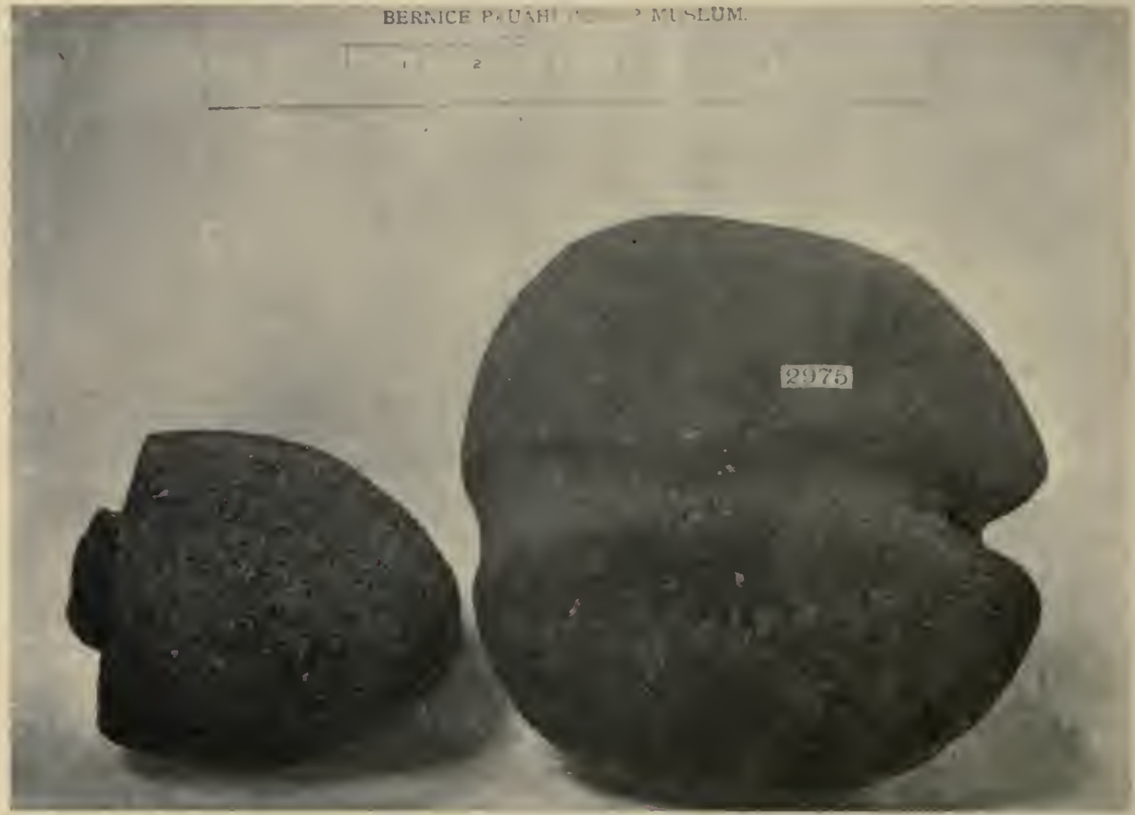

FIG. 3. HAWAIIAN CANOE BREAKERS.

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* Coconuts (*Niu*), the fruit of a palm whose home was on the isthmus of Darien, were probably introduced by the first comers. If planted immediately in this climate at least eight years would be required to reach the bearing age. Ocean waves would not bring these valuable nuts to the Hawaiian Islands which are washed by a northeastern current, and are on the extreme northern limit within which this palm flourishes.

† Although in later days specialized beaters were used for this purpose, as will be shown in the chapter on Kapa Making, at first simple stone hammers served the purpose as among the Maori and other Polynesian people.

successive loops or layers must be hammered into place; the poi pounders were shaped as we shall see when we come to this indispensable implement, and in fine the uses of the simple pebbles with slightly flattened sides as shown in Fig. 1 (4468 and 4469) were even more general than those of the beautiful but specialized hammer of a modern tool chest. In the same figure No. 4482 represents a natural fragment of lava used as a hammer for general purposes in an Hawaiian family for several generations: it is a convenient tool and has the advantage of the shabby umbrella in being less in demand by the borrower.

Canoe Breakers.—In general no handle was used on Hawaii as by the Australians, Maori and so many primitive people, but in a certain modified form of hammer a flexible cord of coconut fibre was substituted for a handle precisely as the rope handle of the iron ball used at the present time in the athletic exercises of "throwing the hammer". Hawaiians used these large and heavy hammers in war to break canoes. They were also swung in the powerful grasp of the Hawaiian chief much like the "morning stars" of mediæval warfare. In the specimen (7945) on the left of Fig. 3 the knobbed neck to which the rope was plaited has been broken off, but in the Munich museum there is a fine specimen, Fig. 4, with the rope attached. The right hand specimen (2975) had a groove for the encircling cord and it has also been used in later times as a pounder of roots both edible and medicinal. And here let us remember that the simpler the tool the more varied its uses. This grooved pebble can be an active hammer or a passive sinker to a net; a stone cup may be a lamp or a paint pot or even a chafing dish in which to burn souls, as will be described later when Hawaiian religion is considered. While it is certainly convenient to call or label a specimen by a definite name, another person may prefer another designation for what he considers the more important rôle the article may play.

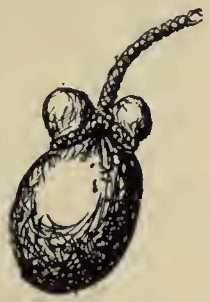
FIG. 4.

Stone Used.—The materials used in fashioning the implements of the Pacific islanders may be enumerated here. The list is not a long one, if we eliminate introduced material, as for instance, granite brought as ballast from China and eagerly sought by the old Hawaiians for sinkers. Of simple minerals we have calcium carbonate in the form of corals and of stalactite in the caves in raised coral reefs, and in a more compact variety resembling marble where lava streams have run over the raised and consolidated reef; Calcium sulphate or gypsum also found in caves or raised reefs and used for the shanks of fish hooks: red ferric oxide or hematite is found in masses of small size in Hawaiian lava flows and is used for clappers and sinkers. Of the rocks composed of several minerals the most common and important is basaltic lava in all its protean forms. From this are made the lamps, dishes, cups, balls, pestles, sinkers, etc., and it is found in nearly all the high islands of the Pacific. Found with this is phonolite or clinkstone, invaluable for adzes and grindstones; it is of a most compact structure, brown, gray, or even black in color and is a mixture of sanadine, felspar, nepheline, hornblend and nosean.* It is found with the older lavas, and on these islands generally at a considerable elevation; on Mauna Kea at 12,000 feet. As its name implies it has a very metallic clink, and old worked specimens often simulate cast steel.

Obsidian or volcanic glass is not a product of the Hawaiian volcanoes but is found elsewhere in the Pacific and is important for the cutting qualities of its glass-like fractured edges. From Rapanui in the extreme east come the dagger heads, and from the Admiralty group at the western edge of the Pacific region come the spear heads and the capital daggers of which a specimen is shown in Fig. 5 (No. 1562). The Rapanui dagger heads, of which three are shown in the same figure, are of coarse, almost stony obsidian and when used are fastened to short wooden handles. Masses of clear obsidian from New Zealand but no objects made from it are in this Museum. In Mexico this volcanic glass was greatly used in olden times for inlaying as the Maori used pana shell and also for the keen narrow knives used for circumcision and other surgical operations.

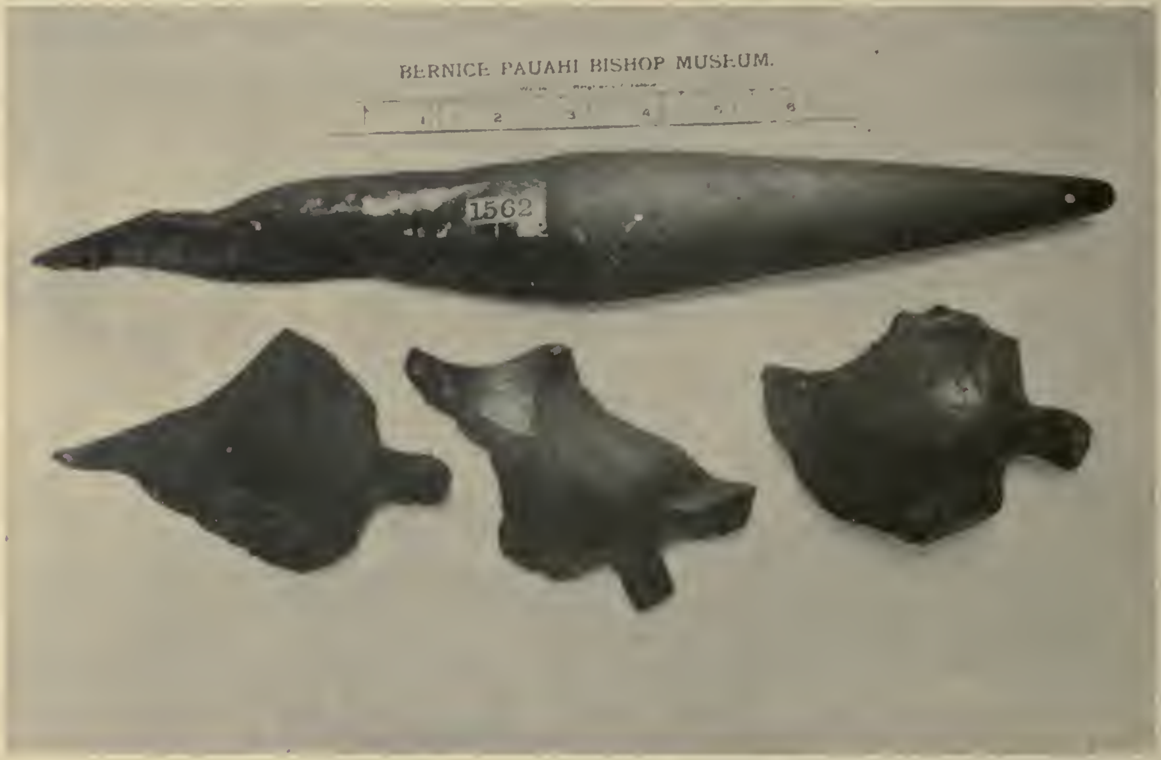

FIG. 5. OBSIDIAN DAGGER AND DAGGER HEADS.

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* The chemical composition of an average specimen is given as: Silica 57.7, Alumina 20.6, Potassa 6.0, Soda 7.0, Lime 1.5, oxides of Iron and Manganese 3.5, Magnesia 0.5. Specific gravity about 2.58.

Pumice (basic) is found as a froth of a greenish hue about the Hawaiian volcanic vents but owing to its extreme friability is not used as is the trachytic pumice drifted to the Hawaiian shores, perhaps from the Alaskan volcanoes; this is found buried in the sand beaches on the windward side of Kauai, and has been used from the earliest times as a polishing material.

Coral limestone is of considerable importance throughout the Pacific region and is often crystalline, hard and compact without much indication of its original structure; in this condition it is used for pestles, poi-pounders, dishes, weights, etc. Calcareous limestone is found compacted of the sand and debris of the reefs blown ashore and cemented by æolian influences, but it generally is not hard enough for making tools, although sometimes good as building stone. The coral reef rock was once used largely by foreigners for building purposes as it can be cut from the reef at low tide with an axe and on continued exposure to the air it hardens. The first church in Honolulu is entirely constructed of this material, but I do not know that the old natives made any extensive use of it in the construction of temple walls or even the walls of fish ponds. Where lava streams have flowed over the raised reef the limestone has almost the appearance of marble, although never in thick beds. In cases where it is granular, like coarse sandstone, it is frequently very hard and tenacious, making capital pounders (Figs. 35 and 37). With this material should be classed the shells so important on the atolls where no stone of any other nature occurs. The huge Tridacna

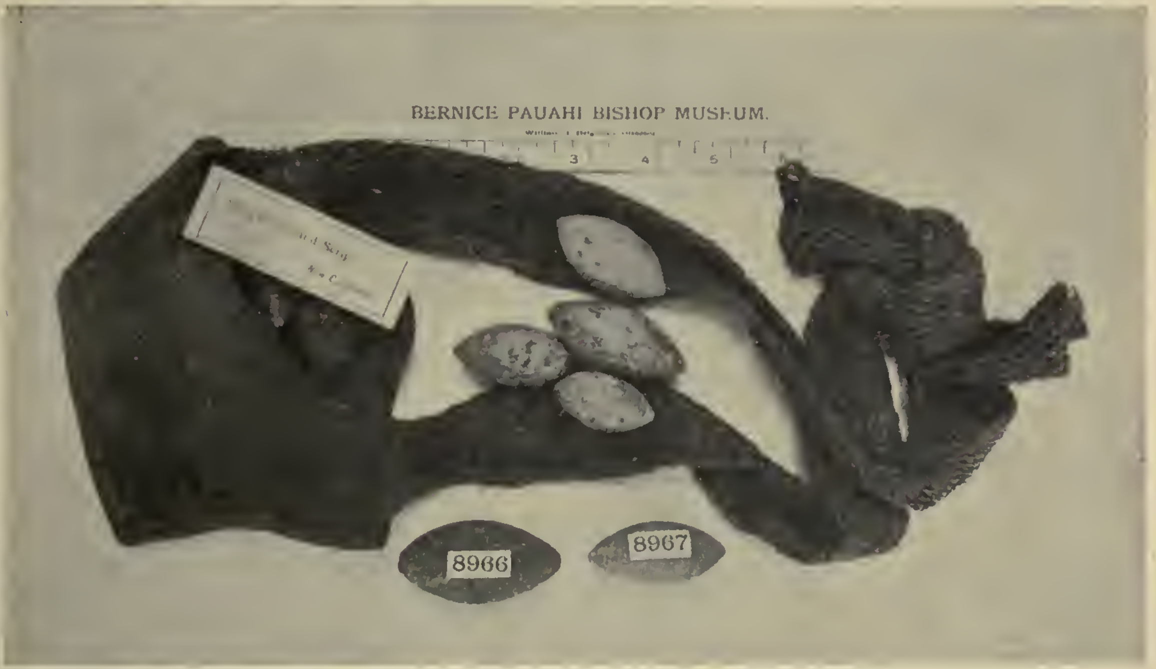

FIG. 6. SLINGSTONES FROM NEW CALEDONIA AND GUAM.

is a quarry for adzes which vie with those made from clinkstone in durability and the power of retaining a cutting edge.

While in the eastern Pacific phonolite is the important material for adzes and chisels, in New Zealand, New Caledonia and other western islands greenstone* largely takes its place. Nephrite or Jade is frequently used for ornament or amulet and even for adzes, while an aluminous form, Jadeite, is used for the blades of ceremonial adzes or axes in many islands of the Bismarck archipelago (Pl. LX.).

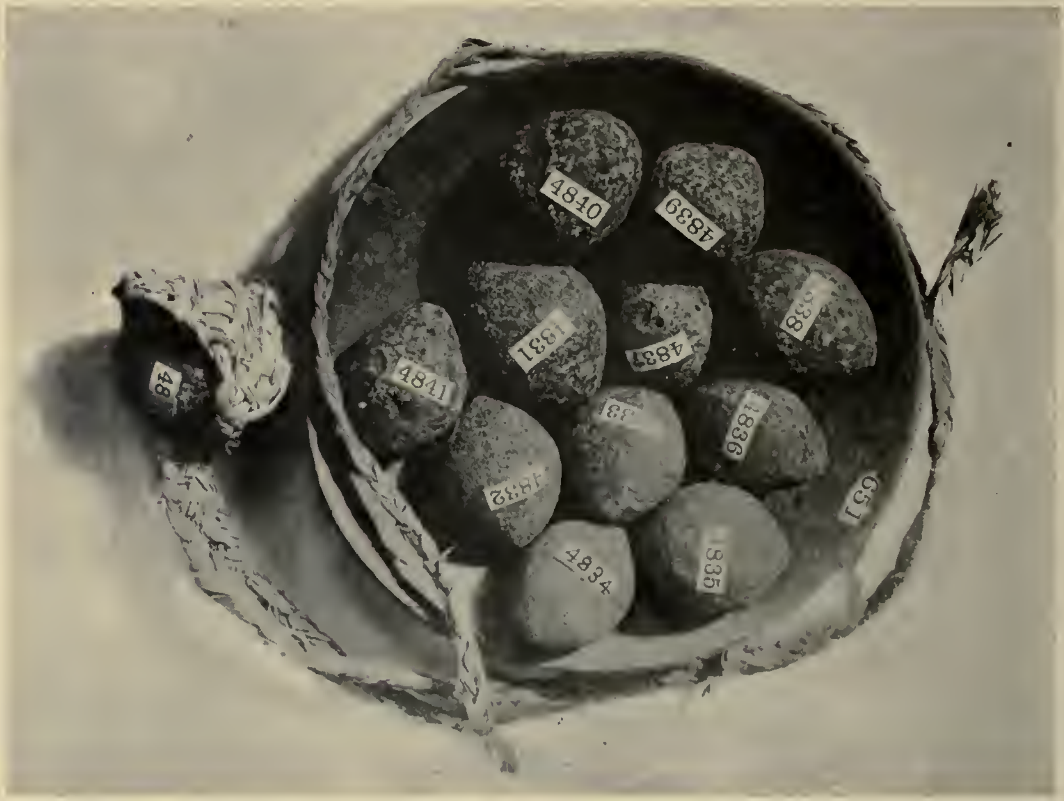

FIG. 7. HAWAIIAN SLING AND SLINGSTONES.

Slingstones.—A hammer with a detachable handle was widely used in Polynesia. Next to a club a stone seems a most handy weapon and is often nearer at hand than a stick. When in the olden time a Hawaiian was obliged to travel into the upper region of the mountains he was much in the habit of taking a stone in his hand for protection albeit no more substantial enemy was to be met than the *aumakua* or spirits whose domain he placed in the waste places above the forests. The smooth pebble from the brook with which the Jewish shepherd boy slew the Philistine giant was very primitive as a weapon beside the slingstones of the Pacific islanders. Where the improved form originated or who was the inventor may never be known; certain it is that all through the Pacific an elongated form with conical terminals was in use. Far away in the Mediterranean the Balearic islanders were sought as the most skilful slingers in the Roman, Greek and Carthaginian armies, and the *nux plumbea* of the Romans was not unlike the stone projectile used by the Hawaiians.

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* A fuller account of greenstone will be given below in the notice of the Maori implements and ornaments.

The New Caledonian on the west had the lightest and most acute slingstones while the Hawaiian in the east had the largest and heaviest, and in both cases, as may be seen from the illustrations (Figs. 6 and 7, and Plate XXXI.) the stones were almost always double cones. Rolled patiently between flat stones with motion from right to left as well as back and forth, the stone fragment gradually assumed the form best suited to insure directness of aim as the missile could be made to revolve on its axis, like a rifle ball, by the skill of the slinger. The average weight of the New Caledonian stones in this Museum is 1.56 oz., and their length is 1.75 in.; of the Hawaiian 4.73 oz. and 2.65 in. The material of the former is a sort of steatite, of the latter lava, and of those brought from Guam by Mr. A. Seale, stalactite. It will be noted that all these stones average lighter than cricket balls (5.5 oz.) or base balls (5.2 oz.).

The collection of slingstones shown in Fig. 7 was found on the grounds surrounding the Bishop Museum beneath a large fragment of lava which was being removed for building purposes. This was near the ancient path from Waikiki to Ewa, on the top of the slight ascent from the marshes. Perhaps the warrior had here placed his ammunition to drive back some enemy using the trail and death had claimed him before his stones had all been slung.

The following table will show the size and weight of the stones figured:—

PLATE XXXI.

4822.	Compact lava, 2.65×1.6×1.5 in., 5 oz.	4829.	Smooth, 2.4×1.4×1.2 in., 3.2 oz.
4814.	Brown lava, 3×1.9×1.7 in., 7 oz.	4816.	Rough rolled, 2.4×1.5 in., 3.7 oz.
4818.	Smooth finish, 2.85×1.7 in., 6 oz.	4812.	Brown, smooth, 2.4×1.8 in., 6 oz.
4813.	Compact lava, 3.1×2.1 in., 10 oz.	4817.	Grey lava, 2.6×1.6×1.4 in., 4.5 oz.
4820.	Lava, 3.4×1.9 in., 10 oz.	8051	Ground, 2.6×1.6×1.5 in., 4.7 oz.
4824.	Grey, clay-like, 2.7×1.8×1.7 in., 6.5 oz.	8049.	Very irregular, 2.8×1.5×1.4 in., 5 oz.
4826.	Red, porous lava, 2.4×1.7 in., 5.2 oz.	7648.	Rough, tufa-like, 2.3×1.7×1.6 in., 5.2 oz.
4823.	Clay (palolo), 2.6×1.5 in., 4 oz.	4819.	Lava, 1.9×1.65 in., 3.7 oz.
4821.	Clay (palolo), 3×1.6×1.4 in., 4.5 oz.	8048.	Cellular lava, 1.9×1.45×1.2 in., 3 oz.
4815.	Rolled lava, 2.6×1.9×1.7 in., 6.5 oz.	4827.	Lava, 2×1.5×1.3 in., 3 oz.
4828.	Cellular lava, 2.4×1.6 in., 5 oz.	7749.	Flattened, 2.1×1.5×1.1 in., 2.7 oz.
4825.	Claylike, 2.5×1.6×1.5 in., 4.5 oz.	4842.	Round, rough (Noa?), 1.5 in., 3 oz.
4830.	Cellular lava, 2.3×1.5×1.4 in., 4 oz.		

FIGURE 7.

4831.	Rolled lava, 2.35×1.9×1.8 in., 6.5 oz.	4837.	Cellular, 1.7×1.5 in., 3 oz.
4832.	Rolled lava, 2.1×1.6 in., 4.5 oz.	4838.	Defective, 2.4×1.65×1.5 in., 4.2 oz.
4833.	Rolled lava, 2.1×1.65 in., 4.5 oz.	4839.	Nearly round, 1.9×1.7 in., 4 oz.
4834.	Cellular, 2.1×1.5×1.4 in., 3.5 oz.	4840.	Cellular, 2.2×1.7×1.6 in., 4.7 oz.
4835.	2×1.65×1.5 in., 4 oz.	4841.	Cellular, 2.1×1.5×1.4 in., 3.2 oz.
4836.	Well-rolled, 2.2×1.55×1.45 in., 4 oz.		

Average 2.65×1.64×1.54 in., 4.73 oz. The heaviest weighs 10 oz., the lightest 2.7 oz.

The simple sling of pandanus was the most inartificial of any used in the Pacific. The Caroline islanders had a handsome sling of braided coconut fibre. The form of sling and their use in warfare does not concern us at present and we may pass to the next stone implement.*

Anchors.—Certainly the anchors used by the Hawaiians before the advent of iron were hardly manufactured. Often a mere stone to which a cord of coconut fibre could be attached served the purpose of holding the canoe temporarily on the shoals near shore. More commonly the canoe of a chief was provided with a stone through which was a natural hole (Fig. 8) a form not hard to find among volcanic rocks. When a convenient hole could not be found a strong net of olona was put around a stone of suitable size and the painter made fast in this way. In sea water abounding in marine worms canoes could not be left long at rest in the water but were drawn out on the beach, when not in actual use, so the need of an anchor was less; in fishing it was sometimes important.

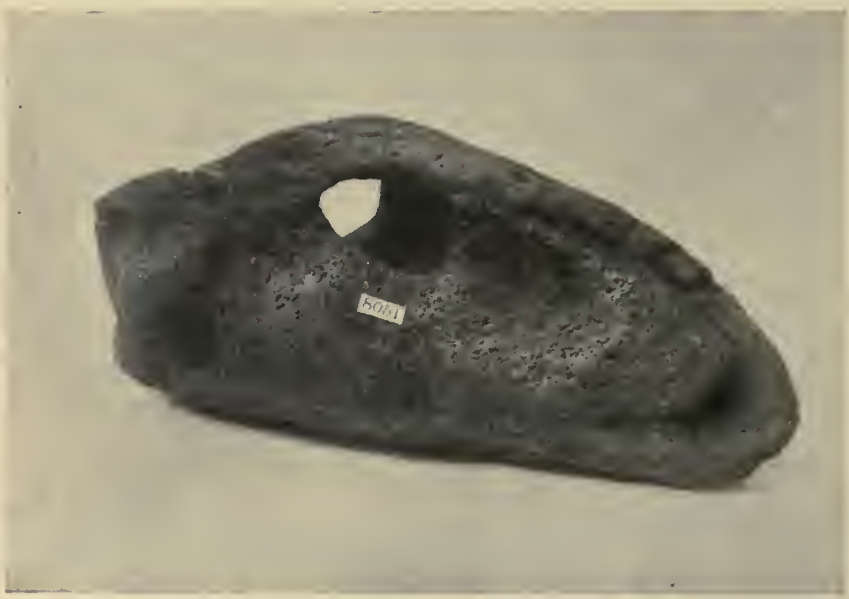

FIG. 8. HAWAIIAN ANCHOR BELONGING TO ONE OF KAMEHAMEHA'S CANOES.

Grindstones.—In New Zealand the presence of sandstone ledges brought together workmen of various tribes to grind or polish their adzes, etc. The same was the case in Australia, but the Hawaiian had no sandstone fit for the purpose and he used the flat slabs of phonolite which often present a parallel cleavage and so form plates sometimes thin enough to use as covering slates. The hardness sometimes made the stone a whetstone rather than a grindstone and the labor must have been immense. In Fig. 9 may be seen examples of grindstones long used and now in the Bishop Museum. The illustrations are fair examples of the worn surfaces of Hawaiian grindstones. In all that have been observed there is an absence of grooves; the abraded surface is always an even, shallow concave.

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*The use of slings was general all over the world, and from the earliest times, and they were, before the invention of firearms, no contemptible weapon. In the chapter on Hawaiian warfare their effectiveness as well as their various forms will be considered. The battle of Nuuanu (1795) was perhaps the last great conflict in which Hawaiians made use of slings.

Grindstones are among the oldest of Hawaiian stone-working tools and their use (except for an occasional knife-sharpening) had ceased long before I had any knowledge of the islanders. That stone balls (Fig. 10) were formed by long-continued rolling between stones of this class is well known, and I am assured that two long narrow stones like the lower one in Fig. 9 were used for this purpose, a man squatting in the native manner at each end and communicating a reciprocating motion to the upper stone as in the operation of sawing. Without cutting sand the operation must have been a tedious one, yet the many specimens extant show that a great deal of this grinding must have been done. The finish is by no means the same on all, but the use to which the balls were put in the games required a fairly spherical periphery. Immense balls of a generally spherical form but rough surface are known as "puts" of some native Hercules, and these are generally unworked and often merely the residuary nucleus of a decomposing mass of lava. One very fine one once in a private collection on Molokai was fabled to have been rolled nearly the length of that island, destroying forests in its course. Another in the Bishop Museum more than a foot in its smaller

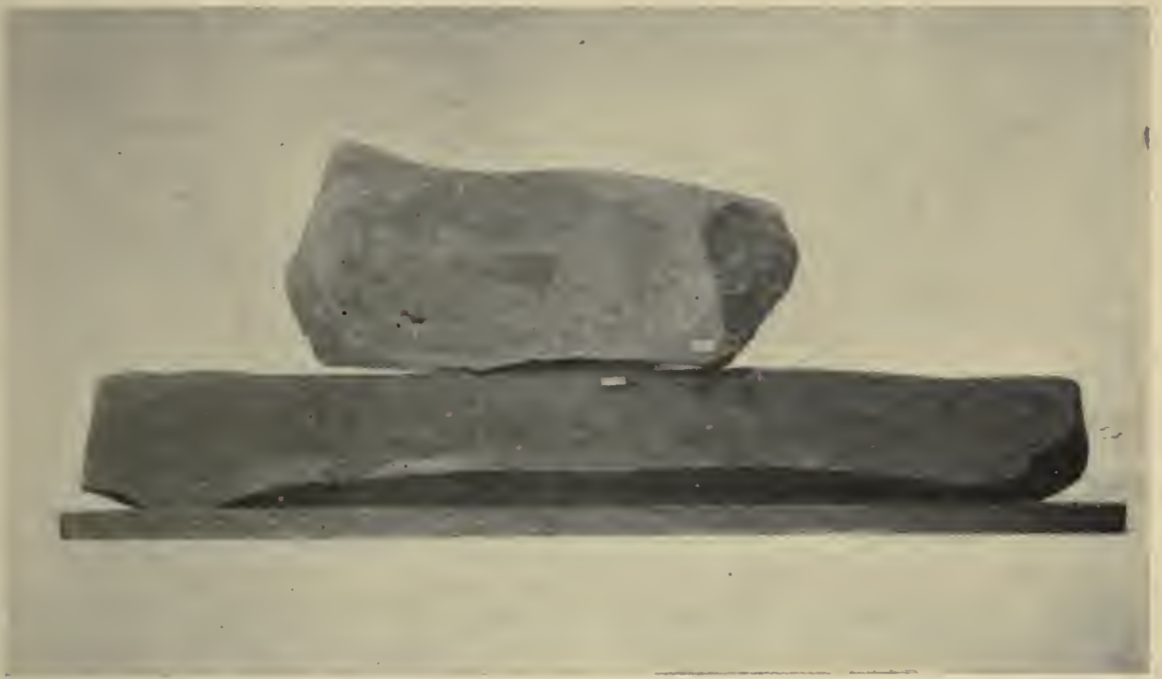

FIG. 9. HAWAIIAN GRINDSTONES.

diameter, and weighing eighty-seven pounds was used as a test of strength on Kauai. The largest in the illustration (No. 3588) was used as a bowl, is of good surface, weighs twenty-two pounds, and is seven and a half inches in diameter.

Similar but flatter grinding stones were used on other groups, as the Solomon, Gilbert and Caroline islands, to grind the shell money of those places. In that operation the fragments of sea shells or of cocoanut shells were roughly rounded by the hammer, drilled and strung on the midrib of palm leaflets, often a score or more at a time, and rolled until polished. Specimens in the Bishop Museum from all these islands show great skill and a beautiful finish. The flat stones on which the Australian ground edible seeds and shaped adzes in turn must be classed with these Hawaiian grindstones. In no case have I seen any ornamentation or definite shaping such as the Mexican both in olden time and now gives to the *metate;* all the grindstones of the Pacific islanders were strictly utilitarian.

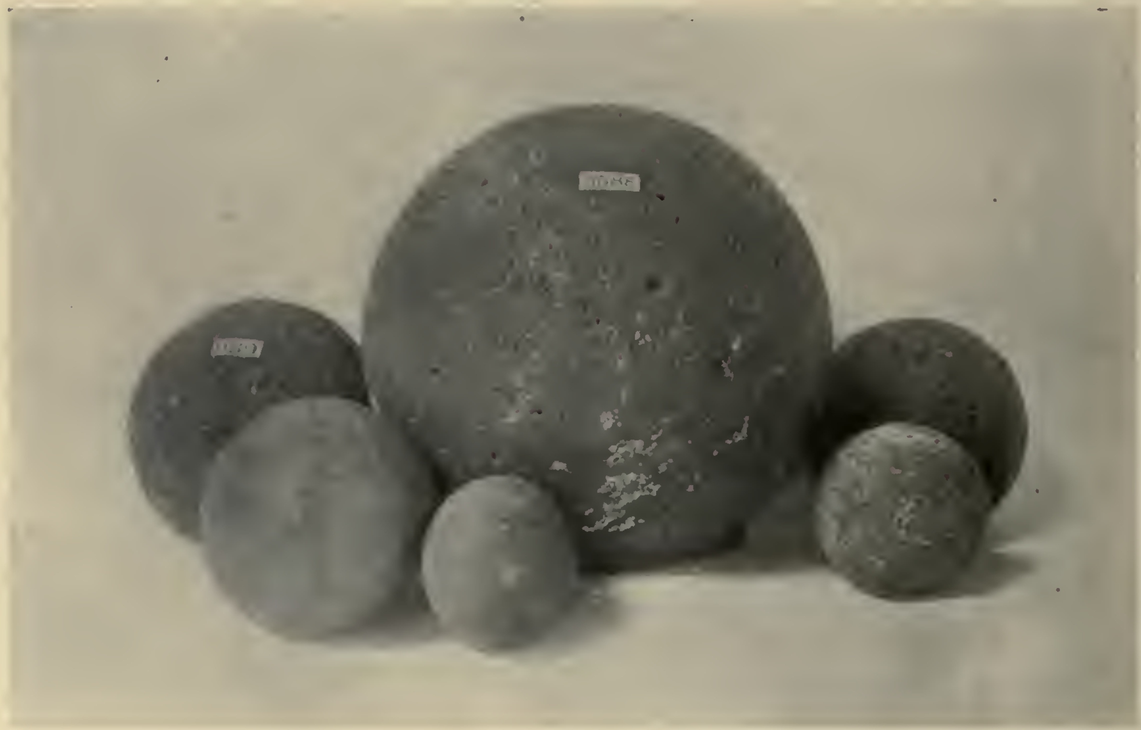

FIG. 10. STONE BALLS USED IN GAMES.

Polishing Stones.—With the exception of adze-sharpening and ball-rolling, the large flat grindstones were not much in demand, the smaller stones, even round pebbles taking their place as more portable and more convenient of application to any surface however irregular. Here again the diversity of uses for the same simple tool is well seen, the pebblestone hammer being very generally, especially by the Maori, used for a polisher.

For coarse abrasion of comparatively softer substances the cellular lava of the Hawaiian volcanoes affords a capital means. The hard, glassy, silicious crust on the flows is full of cells and generally occurs in very convenient tablets as may be seen in Plate XXXIV., No. 3053. When these are partly worn so as to open the first layer of subcuticular cells a most efficient rasp is at hand. This hard cellular lava also occurs in thicker layers and from these, besides a common rasp, a tool of very ancient application was made as shown in Fig. 11. The Hawaiians were a race addicted to bodily cleanliness, and as they had neither soap nor a very suitable sand, this evenly rough stone was their best detergent much used in the olden days. The two specimens figured (4248 and 4249) were used by the Kamehameha family and the spherical cells are still blocked by the abraded royal cuticle. In the same connection pumice was used as a frictional depilatory, as well as to reduce callosities of the skin. Large blocks of pumice were used to remove the bristles from pigs before baking. Another convenient use of the flat plates of cellular lava was for files when broken into strips and rounded. The beautifully finished Hawaiian bone and shell fish hooks were wrought with these apparently clumsy implements which were also required to keep them sharp. The *apuapu anai makau* or fish hook sharpeners (Fig. 12) were found all over the group, but from their small size and brittle nature not many are preserved in collections.

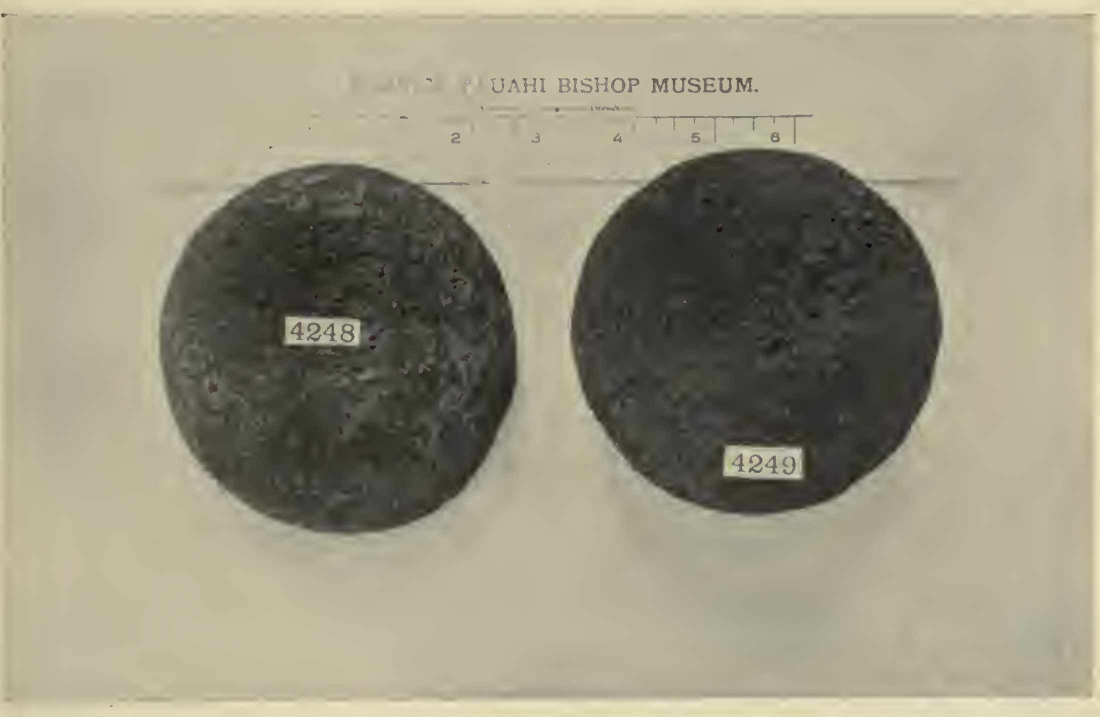

FIG. 11. HAWAIIAN BATH RUBBERS.

As a rule the cellular lava served to do the rough work on the wooden bowls rather than the polishing proper, and the same may be said of the coral blocks which came next in roughness. In fine work the usual succession was fine coral, or *puna*, *pohaku eleku* a rather soft, brittle stone, rough pumice or *ana oahi* (baked pumice), *olai*, *oio* and *lau ulu* or dried leaves of the breadfruit tree. A large variety of polishing stones may be found on Plates XXXII.–XXXV. The *oio* was a stone used especially to polish canoes. It was early discovered that the shape of the polishing stone contributed to its efficiency and the smoother back and the raised knob, ridge or handle soon followed. On the hard woods of Hawaii a long continued rubbing was necessary. The glassy polish affected by the modern fanciers of Hawaiian bowls was, of course, never found on the old dishes or bowls. The polish given by the skilful old Hawaiian with the breadfruit leaves was more lasting as well as more tasteful than the modern French polish. The plates will show fully the various forms and texture of the more common polishing stones and a minute description is unnecessary. The patient application of whatever medium was the secret of the beautiful finish of the best of the old *umeke* or bowls.

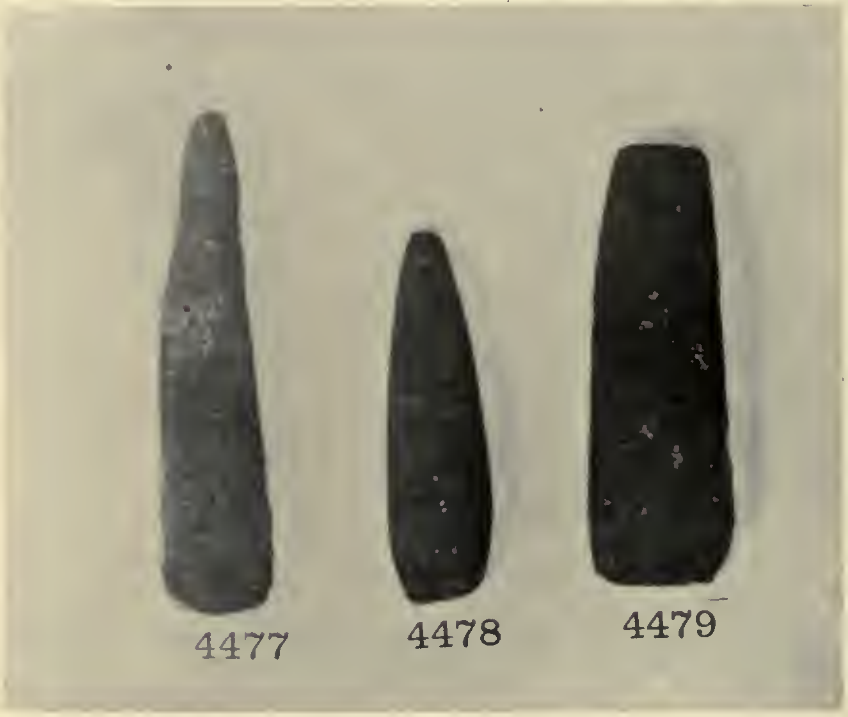

FIG. 12. HAWAIIAN FILES FOR FISH HOOKS.

Door Stone.—Not what is usually meant by that term, but here a literal translation of the Hawaiian name *Pohaku puka*. As the Hawaiian house made of a light frame covered with grass could not be safely bolted when the small entrance door was closed at night, an ingenious contrivance was sometimes used which, if it would not prevent housebreaking would probably wreak vengeance on the intruder. It may be stated that the door was very low, seldom exceeding three feet in height, and one entered as a quadruped. Across the way was stretched a cord over a short peg near the bottom of one door post and by this cord was suspended directly over the entrance a heavy stone. One in the Bishop Museum is shown in Fig. 13. It weighs 36.7 pounds and would be likely to disable if not kill outright any person on whose back it might fall. This is the only mantrap among the Hawaiians which has come to my notice.

Squid-hook Sinkers.—Among the products of the sea few were more generally acceptable to the Hawaiians than the squid or *hee*. Both fresh and dried it was a favorite concomitant of *poi* the national dish. To capture it on the reefs where it abounds, a peculiar hook was used which will be more fully described in the chapter on the Fisheries, but here it must be shown (Fig. 14) to explain the use of the stone sinker. The spindle to which the bone hook is attached has at the opposite end the stone sinker bound face to face with a cowrie, usually *Cypræa tigrina*, which is a favorite bait for squid. When lowered to the bottom the stone falls beneath and is hidden by the shell: the hook is partly concealed by the blades of grass bound to the spindle near it. When the squid grasps the coveted shell, the fisher pulls the line and if all goes as planned, the hook enters the soft body of the mollusk which is then drawn in through the ink which it emits. In Tahiti, instead of a whole shell, fragments are bound like shingles over the sinker which is less carefully cut than by the old Hawaiians. Plates XXXVI.–XXXIX. show a large series of these sinkers which are of various material, even foreign stone from ship ballast. No relic of the old stone time is more abundant than these squid-hook sinkers, and the abundance is due to the fact that they were easily made, and like poi pounders their use continues to the present day. I have seen the old stones used as sinkers to a net as well.

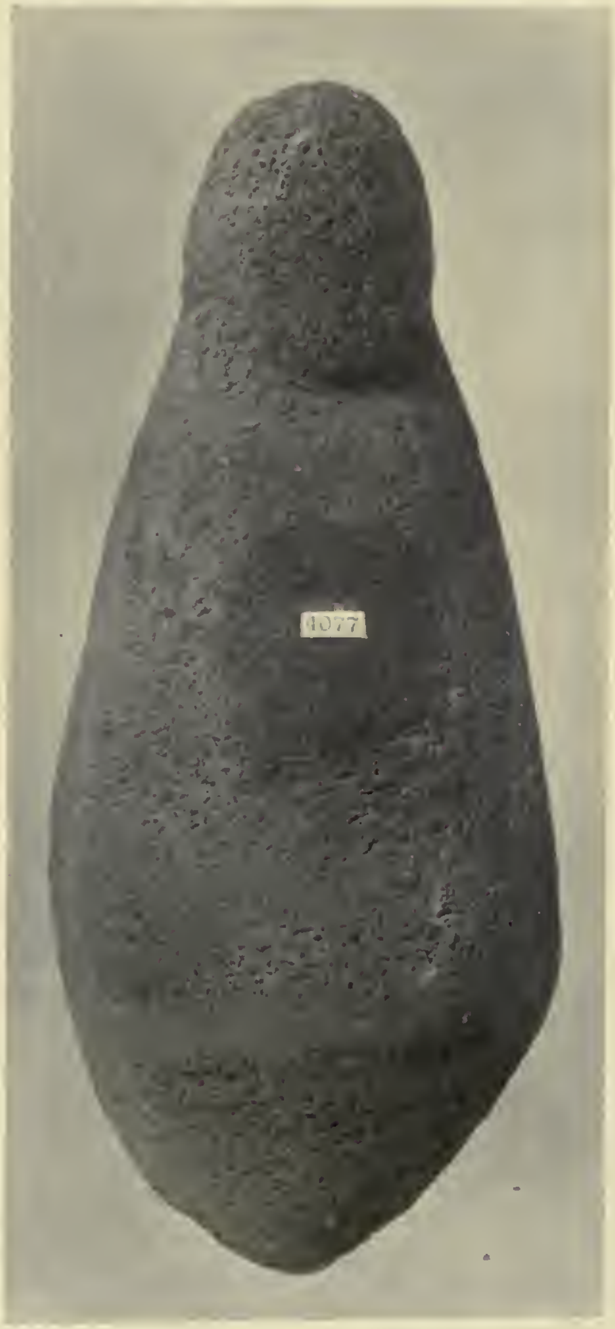

FIG. 13. HAWAIIAN DOOR STONE.

Stone Knives.—While the native bambu furnished convenient knives very generally in use whether to trim kapa or circumcise a lad, stone was also in use for heavier work such as carving a dog or pig. No specimens are known that show any care in working; simply a split stone with a more or less sharp edge not enhanced by grinding and unprovided with any handle as shown in Fig. 15. Such a rude implement could hardly be classed with edge tools. It was not so far advanced as the rough flensing knives of the Chatham islands Moriori, where the stone is shaped to some extent and the handle is formed. Fig. 16 shows these knives used by the Moriori for cutting the blubber from whales or other oil yielding mammals. Still less could they compare with the more finished obsidian knives from the Admiralty group shown in Fig. 4. Probably not much use was made of the Hawaiian stone knives for they are very rare. Knives of wood with inserts of shark teeth will be described in the chapter on Tools and Manufactures. They were less common on this group than on the Gilbert Islands. The more important cutting tools, adzes and axes I leave for the present to be considered later as perhaps the most finished product among Hawaiian stone implements.

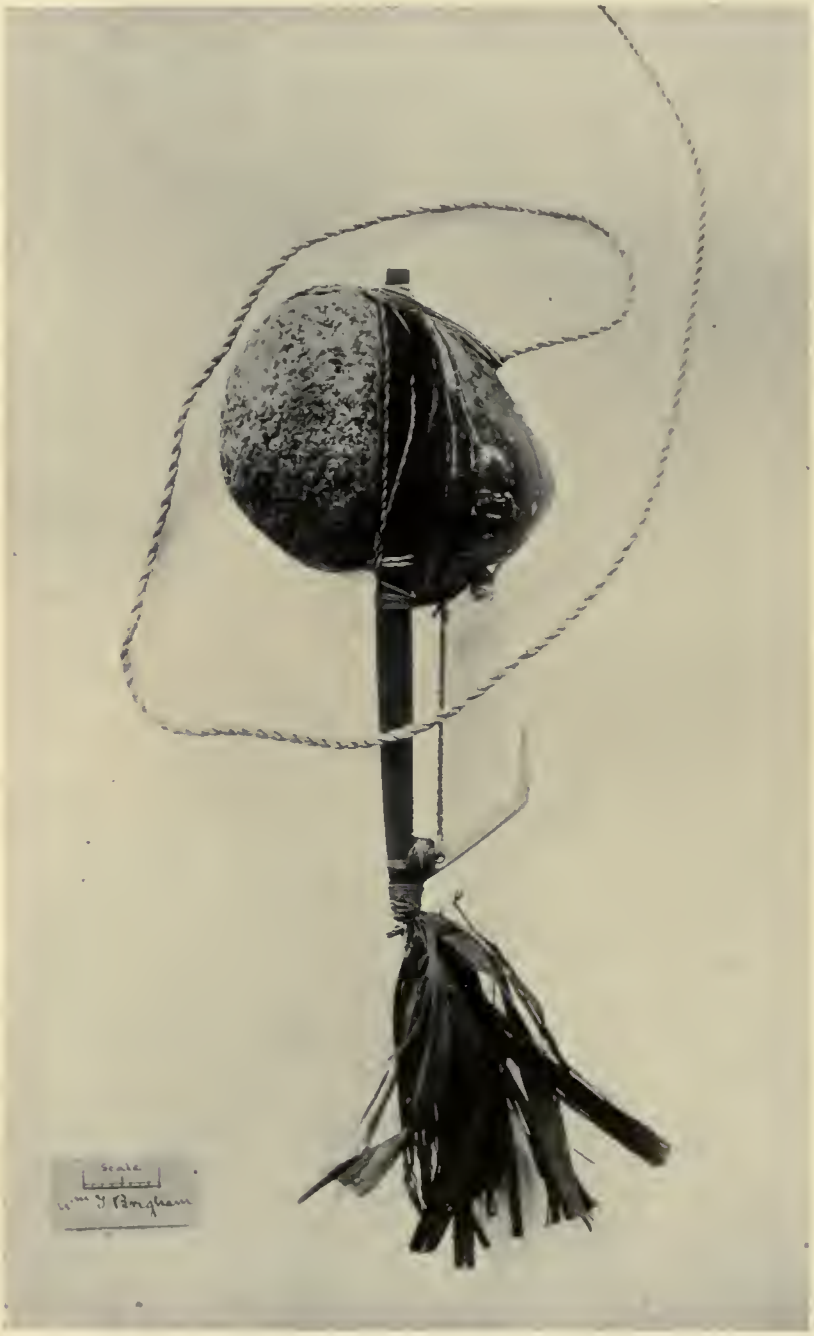

FIG. 14. HAWAIIAN SQUID-HOOK.

Clubs and Pestles.—Warfare and Peace. As with all primitive people these states were not long sundered in time or space, their symbols may be considered together. Clubs and pestles in Hawaii were often of very similar form, and whether a given example as No. 4798 in Plate XL., or better still No. 4657 in Fig. 23, was weapon or tool must be decided by the finish and the abrasion of the grinding end. I believe this latter specimen to be a club (*Newa*) both from the superior finish, unusual on a pestle, and from the absence of any sign of abrasion at the butt. It was a heavy effective weapon made of compact lava.

Another form of newa was free from any ambiguity. Formed of stone like the last, it had four wings or ridges at the head, and although this example (Plate XL., No. 4785) was not so carefully wrought as some, it was a favorite form and similar clubs of heavy kauila wood are in the Bishop Museum. What I believe to have been a later adaptation of this pattern has been described* by Charles H. Read, Esq., F. A. S., from the Vancouver collection in the British Museum. A stone head with four ridges is bound to a baton of kauila wood by cords of oloná. In the Bishop Museum are two heads of stone (Fig. 18) of which No. 4789 closely resembles the one in the Vancouver collection; it weighs 16 oz. The other, No. 4790, is barrel-shaped, 4.4 in. long, and weighs 19 oz. Four deep grooves receive the attaching cords and the base is slightly hollowed out to receive the end of the wooden handle. There is another head of much better finish in private hands in Honolulu, in which the attachment to the wood was facilitated by four knobs at the base. I have examined this through the kindness of a third party but have been unable to obtain either cast or photograph of the specimen which is said to have been found in the district of Kohala on Hawaii. It was brought to me for a name, and there may be other similar specimens

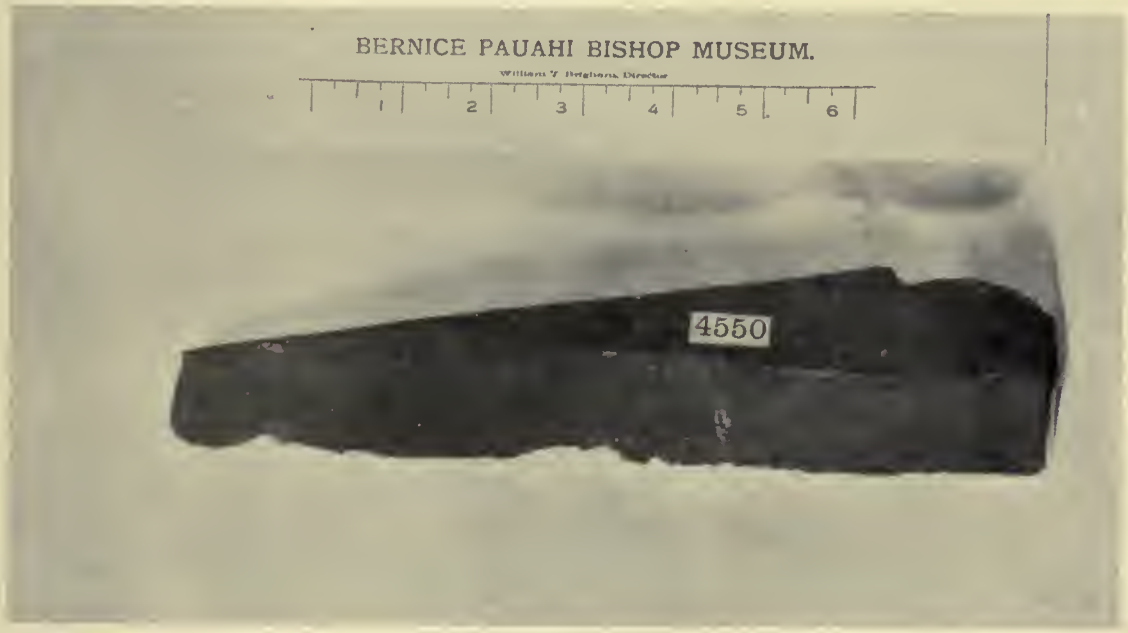

FIG. 15. HAWAIIAN STONE KNIFE.

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*Journal of the Anthropological Institute, XXI., p. 105, pl. x.

lying unknown and neglected in private hands. Those in the British Museum and those here figured from the Bishop Museum are the only specimens known in museums.

On the same plate (XL.) is figured a club of far better finish than those hitherto attributed to the Hawaiians (No. 4786). It has, as can be seen on the plate, a smooth finish and no knob on the handle end, but instead is perforated by boring from each side. Through the bevelled hole thus formed a strong braided cord of oloná is passed, showing that besides its use as a common club the weapon could be hurled as a *bola* to entangle the legs of an adversary. This latter use was a favorite one among the Hawaiian warriors and in Fig. 19, No. 4788, is shown a stone cut with some art to effect the same end. Its section is flat and the distal end is broadened and thickened at the edges; there is a suitable knob by which to make fast the cord. To return to our club on Pl. XL. The section is not round but elliptical, connecting it with the flattened clubs called *mere* by the Maori who greatly prize them; indeed they are often made of jade of considerable intrinsic value. The Bishop Museum possesses one of beautifully clear light green jade 17.2 inches long. Of this flattened form are the Moriori clubs shown in Plate LXII. which seem to show the original form afterwards more or less modified by their Maori successors into *patu* and *mere*.

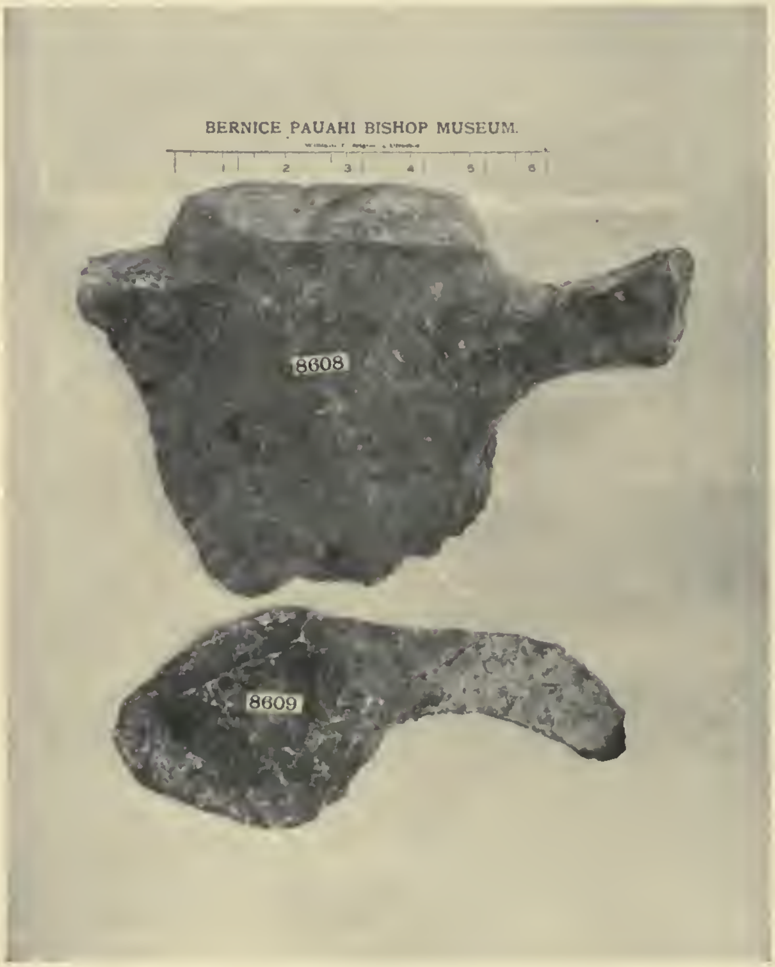

FIG. 16. MORIORI STONE FLENSING KNIVES.

Two other weapons, 4793 and 4794, are shown also on Fig. 19. These were grasped in the hand as a reinforcement and gave the fist a dangerous solidity. They could, according to other native authorities, be used as *bolas*. I have seen only these two which are quite distinct in material and finish, Stone club heads are common enough in other groups, especially in the western Pacific where the Solomon islanders make very elaborate short clubs with a round unpierced stone head concealed within basket work. The wooden handle is often elaborately inlaid with pearl shell. The New Guinea men make the well-known spherical club heads fastened to the stick with gum in which are imbedded small shells or squares of pearl shell. Dr. Giglioli has described these clubs in a learned and complete essay.* The neighboring inhabitants of the Bismarck Archipelago make heads of various forms as shown in Fig. 20. The *golegole* (No. 1571) is rare, but the star-shaped forms are more common and show great care and patience on the part of the maker. It should be noted that this last form is now frequently imitated and with modern tools is not difficult to shape, but the finish will generally betray the work to the initiated. I do not think that this star form has any connection with the stone stars of the Peruvians described by Squier and others. The stone stars described by Whymper as common in Ecuador and figured by him† have no cylindrical body from which the star arms radiate as in the club heads of the western Pacific. None have more than six rays, and in some these rays are very short. In weight they vary from five to twenty ounces, and while the Ecuadorean stars may have been used as club heads (at least the heavier ones), it is quite as likely they were ornaments or symbols connected with star worship. The disk clubs of the New Caledonians belong to the same class and are usually made of jade, although this is sometimes of the coarsest grade.

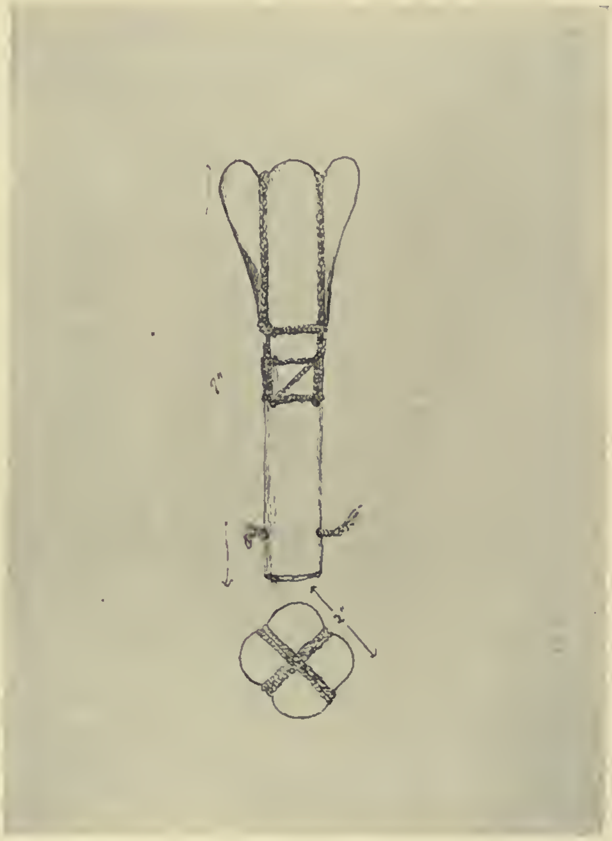

FIG. 17. COMPOUND HAWAIIAN CLUB.
From Read.

And here I may be permitted to digress so far as to mention the jade working of the Maori and New Caledonian. Greenstone is not found on the Hawaiian islands, hence the material was not described with the Hawaiian stones in the earlier part of this chapter, but in New Zealand, New Caledonia and New Guinea the products in the shape of adzes, clubs, amulets or ornaments are among the choicest of worked stone objects and are found in every museum.

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*Le Mazze con testa sferoidale di pietra della Nuova Brettagna, dette Palao. Prof. Enrico H. Giglioli, Archivio per L'Antropologia e la Etnologia, Vol. XXVII., p. 17. Firenze, 1897.

†Travels Amongst the Great Andes of the Equator, by Edward Whymper, p. 269.

The middle island of the New Zealand group has been sometimes named for the greenstone or *pounamu* found there, but the name properly belongs only to the quarries,—*Te wai pounamu.* Many grades of greenstone are worked, but the choice, delicately colored and somewhat translucent varieties usually called jade are the ones of present interest. These are very hard and fine-grained and lend themselves to careful and patient work as few other stones. Dr. A. B. Meyer the distinguished Director of the Dresden Museum has published* full information on the physical and chemical characteristics of this stone which in its varieties has many names as jade, jadeite, melanite, nephrite, greenstone, serpentine, chloro-melanite, etc. From Dr. Meyer's fine work I borrow three analyses (by Frenzel) to show the constant proportion of silica in specimens from different localities:—

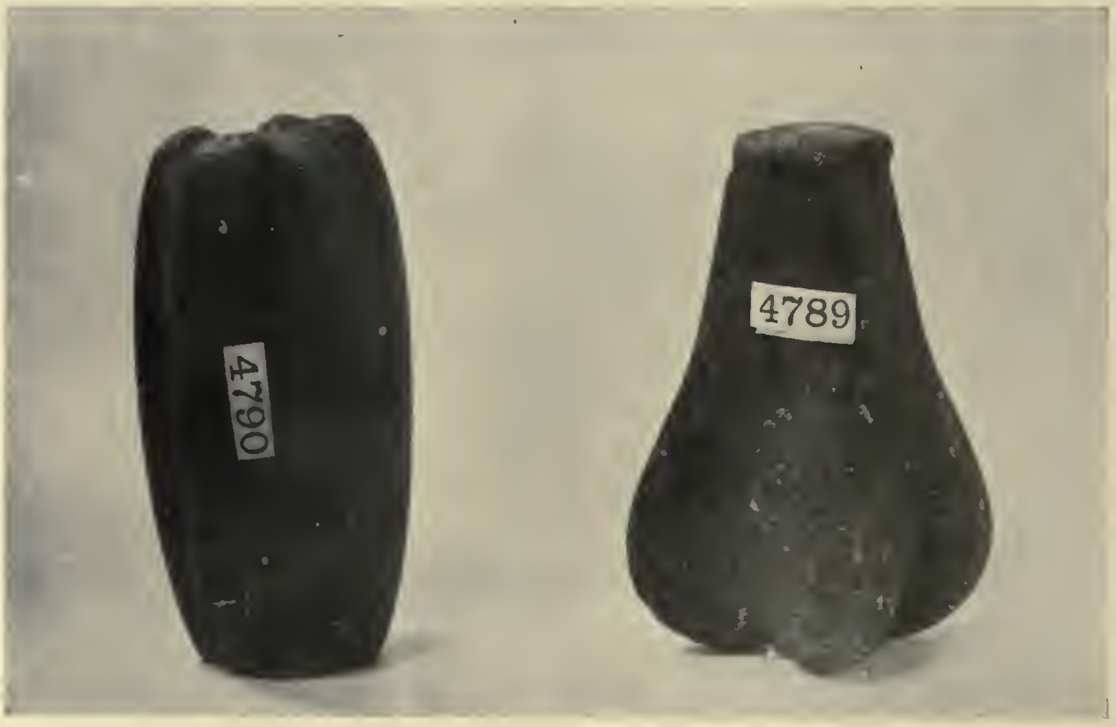

FIG. 18. HAWAIIAN CLUB HEADS.

	New Guinea Adze.		*New Zealand Adze.*		*New Caledonian Adze.*
Silica,	56.80		56.30		55.80
Alumina,	16.25		....		....
Iron oxide,	7.53		5.62		5.67
Manganese,	trace		....		....
Lime,	5.60		14.30		15.80
Magnesia,	3.13		21.95		20.54
Soda,	12.06		....		....
Water,	0.25		2.90		2.10
Sp. gr., 3.16	101.62	Sp. gr., 2.98	101.07	Sp. gr., 3.06	99.91

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*Jadeit—und Nephrit—Objecte. B. Asien, Oceanien und Africa. Königliches ethnographisches Museum zu Dresden, Leipzig, 1883.

In the second and third specimens lime and magnesia take the place of alumina and soda in the first, otherwise the body material silica and the coloring element iron oxide remain essentially the same.

In New Zealand the principal forms of the worked stone are *mere*, *hei-tiki*, *toki* or adze and ear ornaments; in New Guinea chiefly the adze, and in New Caledonia adze, disk-club and beads of a spherical or flattened form. Dr. Meyer gives illustrations of these in Plates V. and VI. of the work cited, and the Maori articles are well shown in a work by Hamilton.* So slow was the abrasion in the rude grinding that it is said to have taken more than a generation to finish a mere. The tools were blocks of sandstone rubbed slowly by hand, water dropping on the stone meanwhile. One form of ear ornament resembling a capital J in the type called Gothic was of peculiarly difficult workmanship. The odd-looking heitikis with one-sided heads were worked largely with drills and sand; they had drilled holes for suspension from the neck.

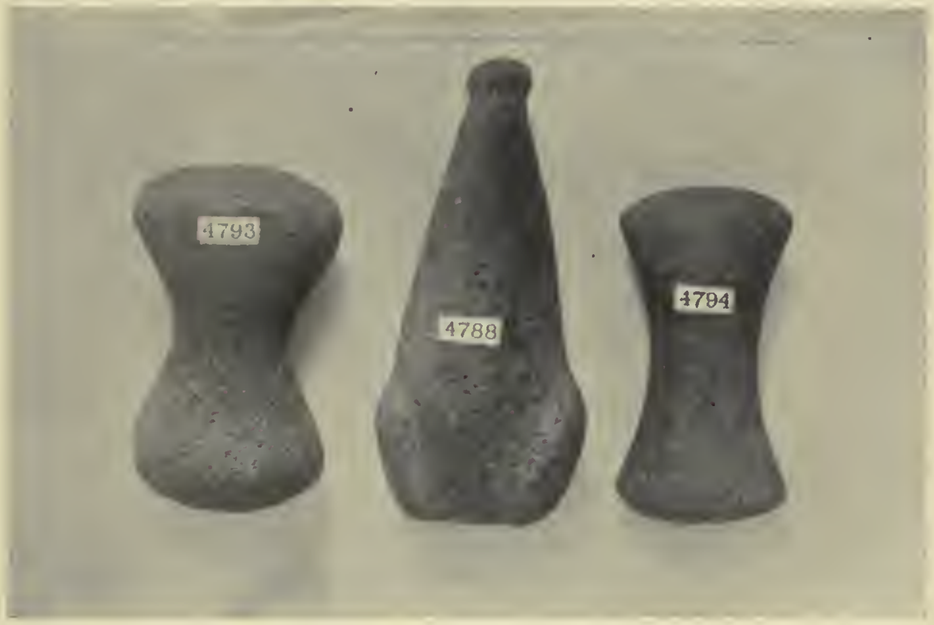

FIG. 19. HAWAIIAN STONE WEAPONS.

Of all these forms none seem closely related to the Hawaiian except certain clubs and pounders. I am in doubt whether to class a certain Hawaiian shell ornament in the Bishop Museum with the heitiki, but as it is an unique specimen I have decided to relegate it to the chapter on Ornament.

An antique form of Maori club is shown in Fig. 21 which both in material and shape recalls the Hawaiian pestle, but the handle end is in both examples ornamented with human heads, and one (No. 1514) has two rude masks on the body as well, while both have the butt more rounded than in the Hawaiian pestle. Of better workmanship

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* Maori Art, by A. Hamilton. New Zealand Institute, Wellington, N. Z.: 4to., Pls. XLV., XLVI.

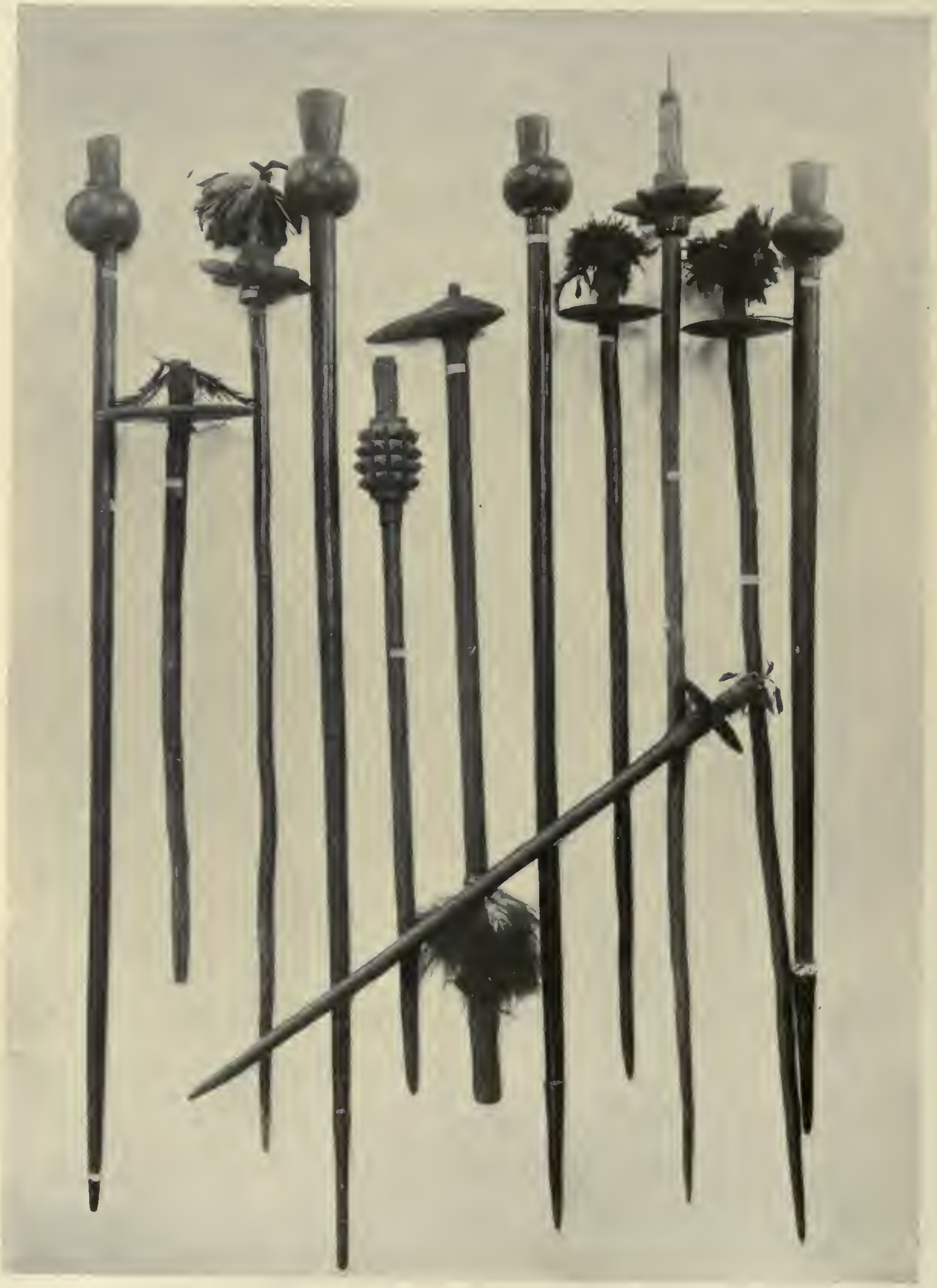

FIG. 20. CLUBS OF NEW GUINEA AND THE BISMARCK ARCHIPELAGO.

are the beaters shown in Fig. 22; both are of very dark greenstone and smoothly finished. The first, No. 1513, is a *paoi* or pestle to crush fern root, a process for which wooden pestles are more commonly used, and the other, No. 131, comes to the Bishop Museum labelled "Hand Club", but it certainly could have been used as a pestle, while its shortness (9.6 in.) would be inconvenient for a club.

Pestles.—On the Hawaiian Group there was no corn to be ground so that we find neither the roller and *metate* of the Mexican nor the long pestle of the Amerind; nor did the Hawaiian grind the fern root which he usually baked, but he had the nut of the *Aleurites moluccana* or kukui and the kamani *Calophyllum inophyllum* to crush both for food and for the oil. Here also, unlike the custom of the southern islands, the awa (*Piper methysticum*) was ground, not chewed. The grinding of bait for fishes was always done with wooden pestles which will come properly under Fisheries.

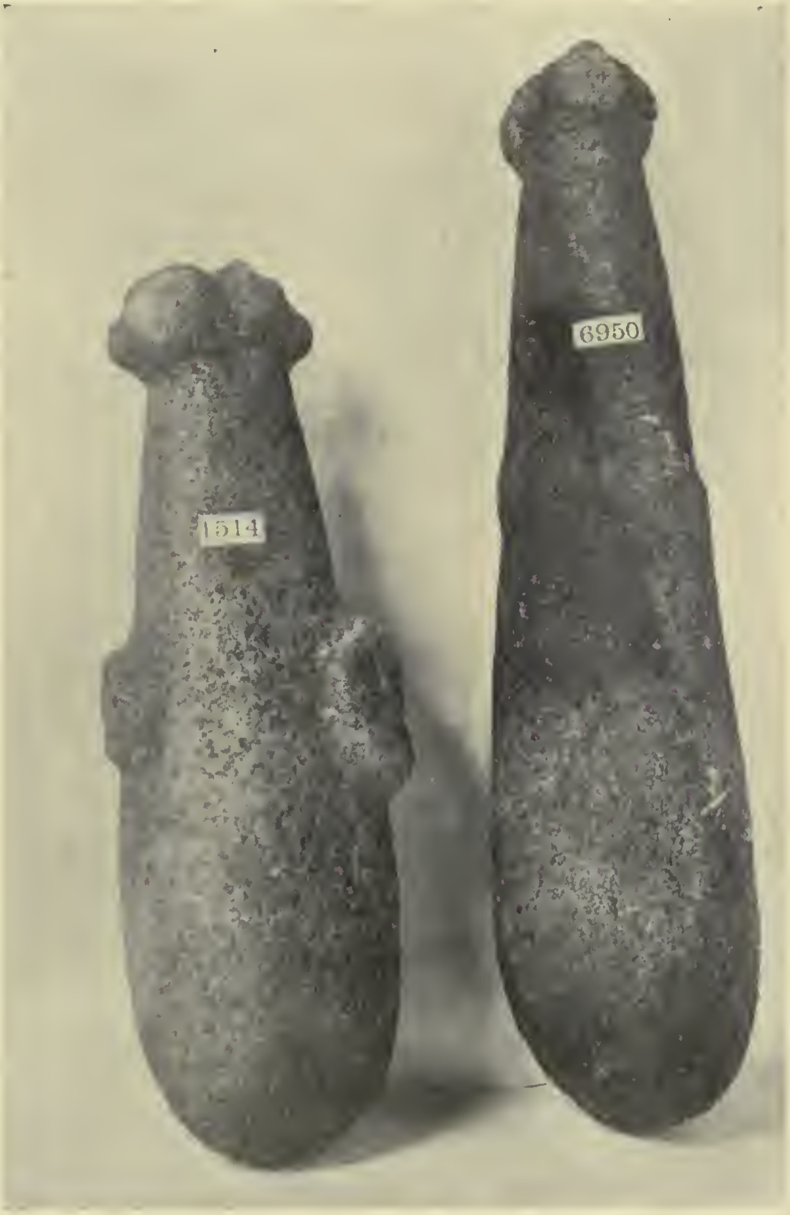

FIG. 21. ANCIENT MAORI CLUBS.

As a general thing the Hawaiian pestle had no knob at the handle end, but some of good workmanship, shown in Plates XLI. and XLII., have definite bosses. In some cases the knob is replaced by depressions on opposite sides of the stem as may be seen in No. 7999 of Fig. 23. The rudest form, which I believe to be very ancient, is shown in No. 4483 of the same figure; it is simply a convenient pebble worn by use, and I have found it a suitable implement to crush kernels of nuts or the stems of medicinal plants. Where choice intervened the *kahuna lapaau* or aboriginal "medicine-man" always selected ivory or bone pestles for comminuting his drugs,—the material gave more power to the drug. Several ivory pounders are in the Bishop Museum as well as a medicine cup made from the vertebra of a small whale.

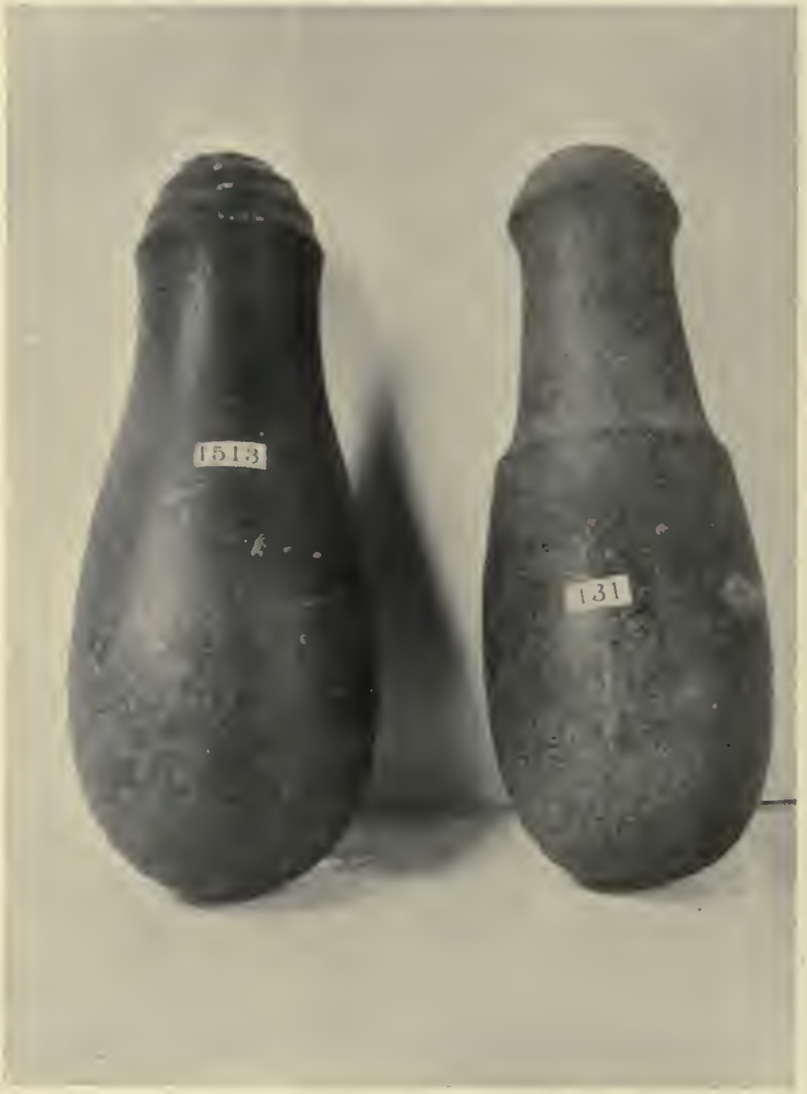

FIG. 22. MAORI PAOI (NO. 1513) AND CLUB (NO. 131).

Returning to Fig. 23, we have in No. 4660 another primitive pestle found in the ruins of an ancient heiau or temple. It is of hard cellular lava rudely wrought, but considerably worn by use. Next to it is a very choice specimen, No. 4657, which equals in the workmanship the best Maori specimens; are we to consider this the *newa* or hand club of some chief? I have already mentioned the difficulty encountered in attempting to distinguish between the weapon and the tool. The curious figure in the lower right hand corner, No. 7947, is what remains of a broken pestle which by the hand of a modern forger has been converted into the semblance of an ancient god. Too many such occur, and the Portuguese or Japanese stonecutters make many a dishonest dollar from the inexperienced collector of Hawaiian curiosities, and the native of the soil is not free from this cheat. So closely are genuine stone dishes or idols imitated that it is one of the most difficult matters to pass judgment upon, even for the few experts, and it is safer for the tyro to reject any specimen even if be disinterred before his eyes.

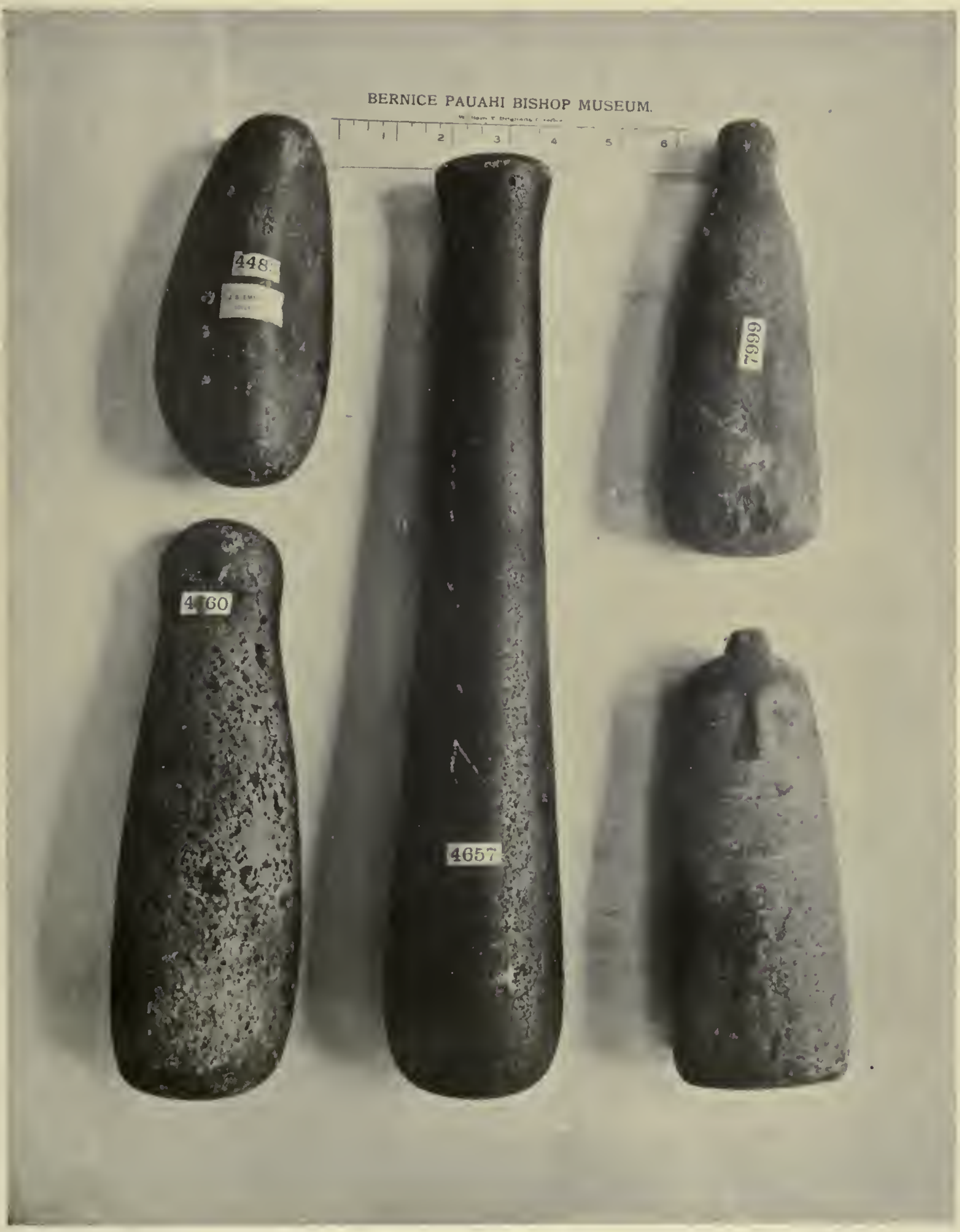

FIG. 23. HAWAIIAN PESTLES.

The pestles in Plates XLI. and XLII., also in Figs. 24 and 25 are fair examples of the Hawaiian form, and while in modern times certain ones are often designated "noni-pounders" I doubt there was any distinction in ancient times and the same stone ground kukui nuts for oil or the awa root for the hot and exhilarating drink or, yet again, noni (*Morinda citrifolia*) for dye or medicine. Some, as will be seen, are flattened at the butt, not always by long use; most, however, are rounded to fit more closely the bottom of the mortar.

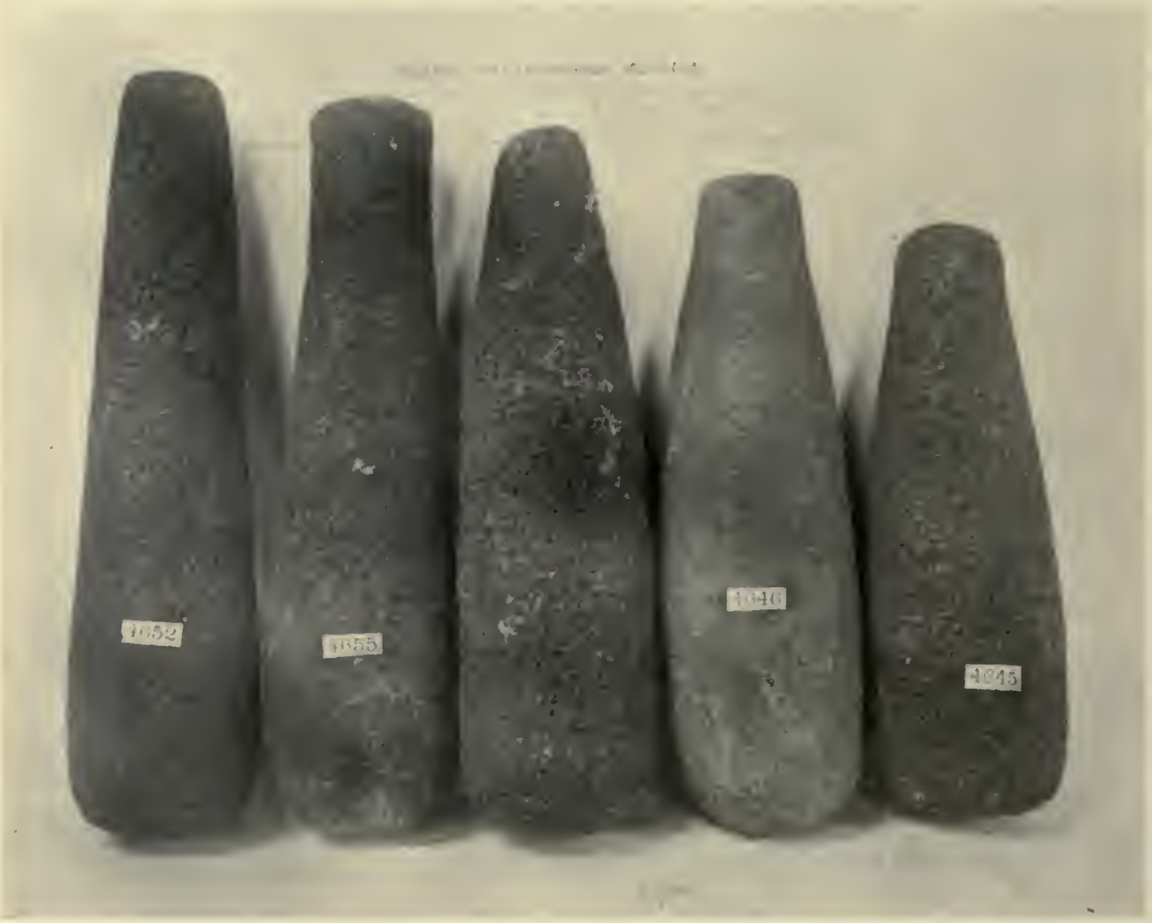

FIG. 24. HAWAIIAN PESTLES.

A much more common class of pestles was shorter, conical in shape, and held in the hand. These mullers, shown in Fig. 26, were generally used to pulverize charcoal or to grind ochres for paints, or to crush berries or succulent stems for dyes. Often no mortar was required but a shallow dish or a flat rock served as nether millstone. Older in point of development than the taller brethren, they serve as a transitional form to the *pohaku kui poi* or poi pounders, one of the most characteristic of Hawaiian stone implements and one that survives to this day without a rival in the hand manufacture of the national food.

Phallic Emblems.—The almost universal worship of the Phallus in early stages of human development extended to the tribes inhabiting the Pacific, and was prevalent among the Hawaiians. The worship is not to be considered here but the stone emblems of it must be noticed for some of them are liable to be mistaken for pestles. I have never found the curious nail which my friend Dr. Krämer describes from Samoa* but there are in the Bishop Museum many phallic objects of undoubted antiquity. The stone lamps offer many illustrations and the *pohaku eho* are sometimes found buried or otherwise hidden. In one case only have I seen the female element represented and in that *lingam* it appeared as a well wrought ring through which passed, but wholly detached, a conical stone similar to the larger of those shown in Plate LXXV. Many of the objects in this plate are well made and some are of great size as if intended to occupy a temple, and not merely a private sanctuary. In the Berlin Museum (Arning collection) is a male organ of such naturalistic treatment that I infer it was made in later times and not intended as an object of worship, for in all sacred phalli a very conventional treatment is shown. The images of the Hawaiian

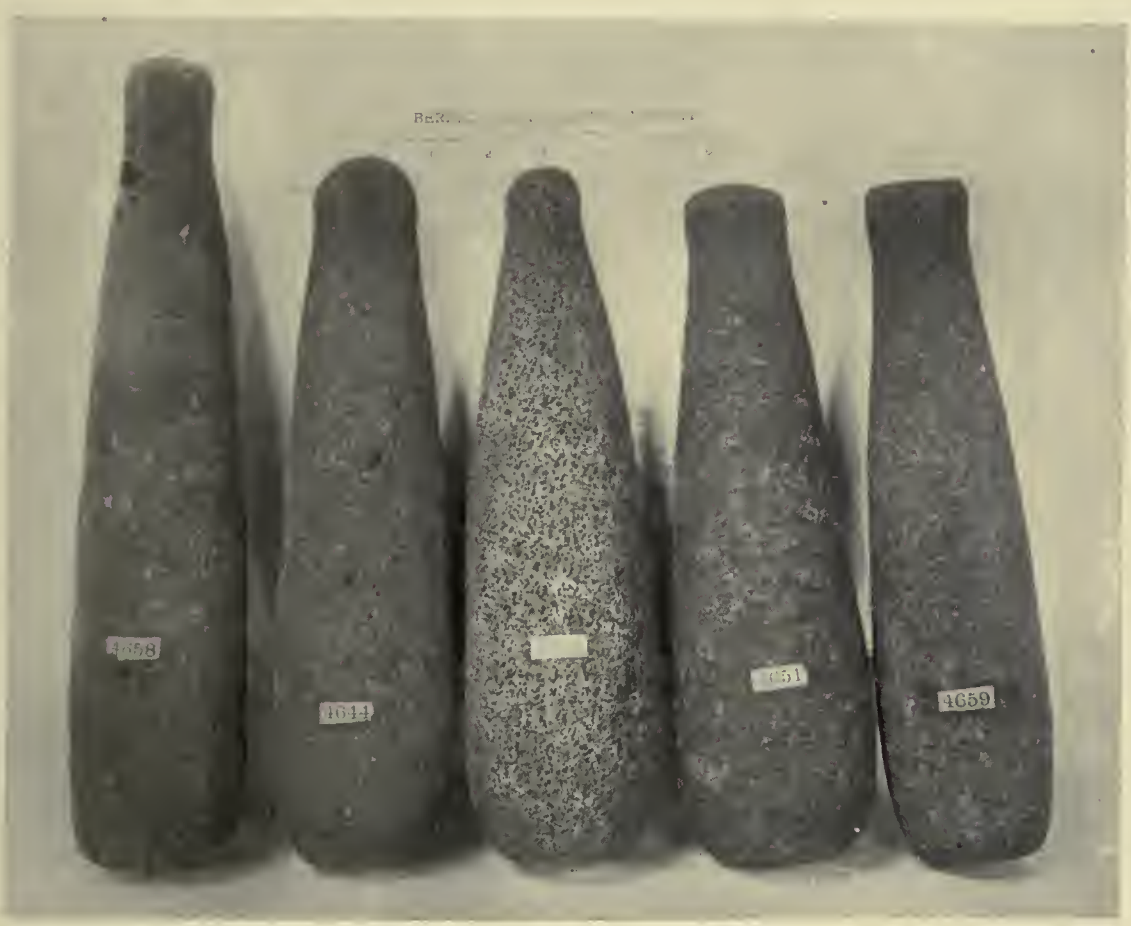

FIG. 25. HAWAIIAN PESTLES.

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* Der Steinnagel von Samoa, von Dr. Augustin Krämer. Globus Bd. LXXX., Nr. 1 (1901).

gods, especially those carved from wood are often obscene to an extreme only equalled in New Zealand among the Maori or in Japan.

Near Kalae on Molokai is a curious sculptured stone having at first glance the appearance of being waterworn. It is, however, on the top of a hill where no water could have done the work. I photographed it in 1889 (Fig. 27) and learned from the residents of the neighboring ranch that it was once the object of great veneration under the name of Kaulunanahoa. It has been carved to a great extent, but how much the natural conformation of the rock contributed to its present form cannot be told. Dr. Krämer has described[*] this also as phallic. It is in a region now depopulated but once with a large native population as the remains of temples and other structures indicate. In its present desolation and neglect, this once venerated stone is made the bearer of various names of tramps. It is as high as an ordinary man.

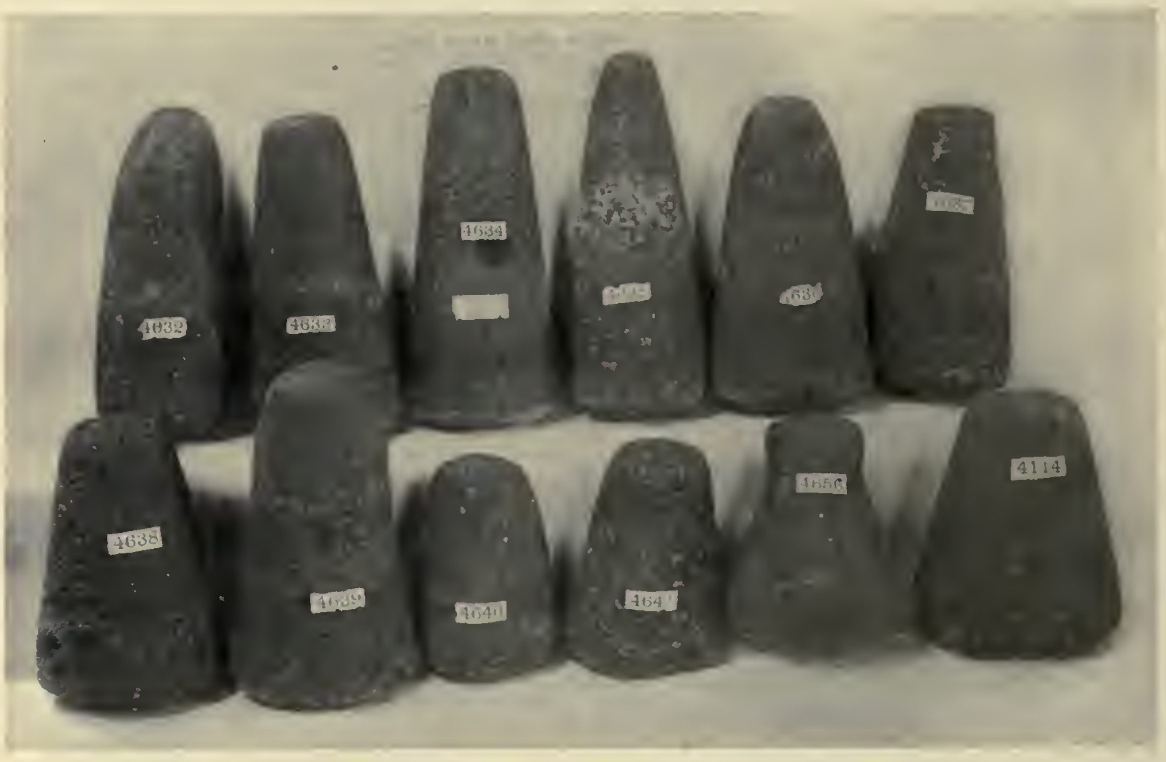

FIG. 26. HAWAIIAN STONE MULLERS.

Mortars.—Before following this line of form development we must turn back to fit the pestles with their mortars. I do not know of any pot holes in the rocks outside of torrent beds that were used for mortars as was so common among the Amerinds of New England.

The simplest mortar in the Bishop Museum is shown in Plate XLIII., No. 1227. It is 15 inches in its largest diameter and bears marks of considerable use. It seems

[*] Globus, Band LXXIII.

to have been a small boulder or nodule of very cellular lava, and was rudely fashioned more by use than in the original intent. It is considered an awa mortar, because of its chief use, but would have been convenient for any trituration. Of similar form, but better workmanship, are the mortars shown in the lower group on the same plate. The last one of the group has actually been worn out by long use and the bottom has dropped away.* The middle one shows an approach to the more finished specimens we will next consider, and which show a remarkable degree of patient and understanding work. Both inside and out the finish is good, but within the shape is very perfect, being almost almond-shape in section. The five mortars shown in Fig. 28 were all found on the island of Kauai, hidden in the earth within the limits of the Kealia sugar plantation, and were turned up by the plow in cultivating for cane. Mr. George H. Dole was at the time manager of this plantation and added them to his private collection, most of which afterwards came to the Bishop Museum. The dimensions of these rare specimens, for I do not know of any similar in any of the museums, are as follows, in the order in which they are placed in the figure. Height and diameter in inches:—

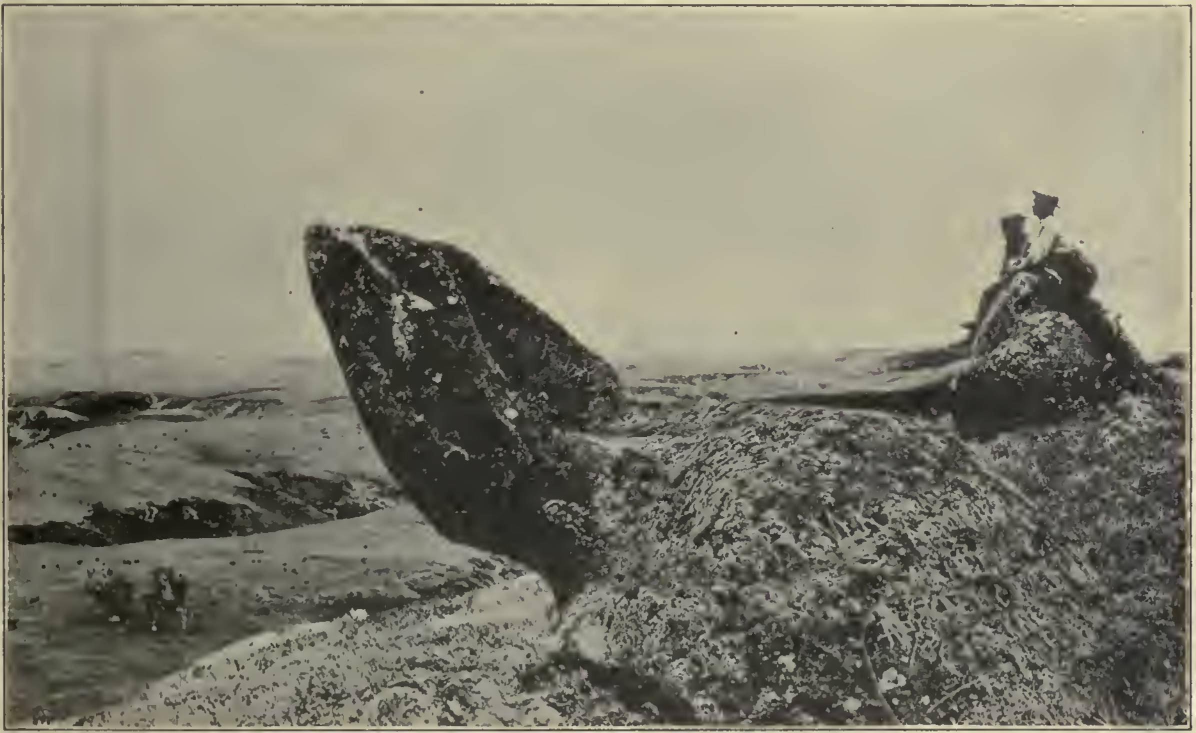

FIG. 27. KAULUNANAHOA ON MOLOKAI.

No. 1222, 13.5×6.2; 1224, 8.5×7.2; 1221, 7.2×7.2; 1223, 8×8; 1225, 11.5×7.

These were generally used for grinding kukui or kamani nuts for both oil and the relish called *inamona*. I have traced the place of their manufacture to a hill above

---

* It is not impossible that the bottom has been broken intentionally to prevent subsequent use.

Makaweli on Kauai where there are many fragments both of the lava used for mortars and the clinkstone of which adzes were shaped. To this factory I shall have occasion to revert when describing the adze making. What the exact process of manufacture was I do not know, nor can any of the old natives satisfy me. Certainly the method was not a perfect one for many failures are recorded unintentionally among the refuse heaps of this factory. One that I brought from there is shown in Fig. 29 and it will be seen that the sides were split off uniformly all round, a condition that is rather puzzling, for the bottom of the cup seems about finished, and the accident must have occurred when the finishing touches were being applied. It can hardly have happened by a fall on to the stone ledge that crops out here and there within the limits of the workshop. There is the ruin and my readers may adopt such explanation as seems good. That the stone worker was often deceived in the quality of his selected stone is shown by the many failures after much work has been expended, but when the uncertain nature of volcanic rock is considered and its common want of homogeneity is known, it is not surprising. Many an experienced sculptor has been bitterly disappointed in his chosen block of Carrera marble and after much labor has come upon a hopeless flaw.

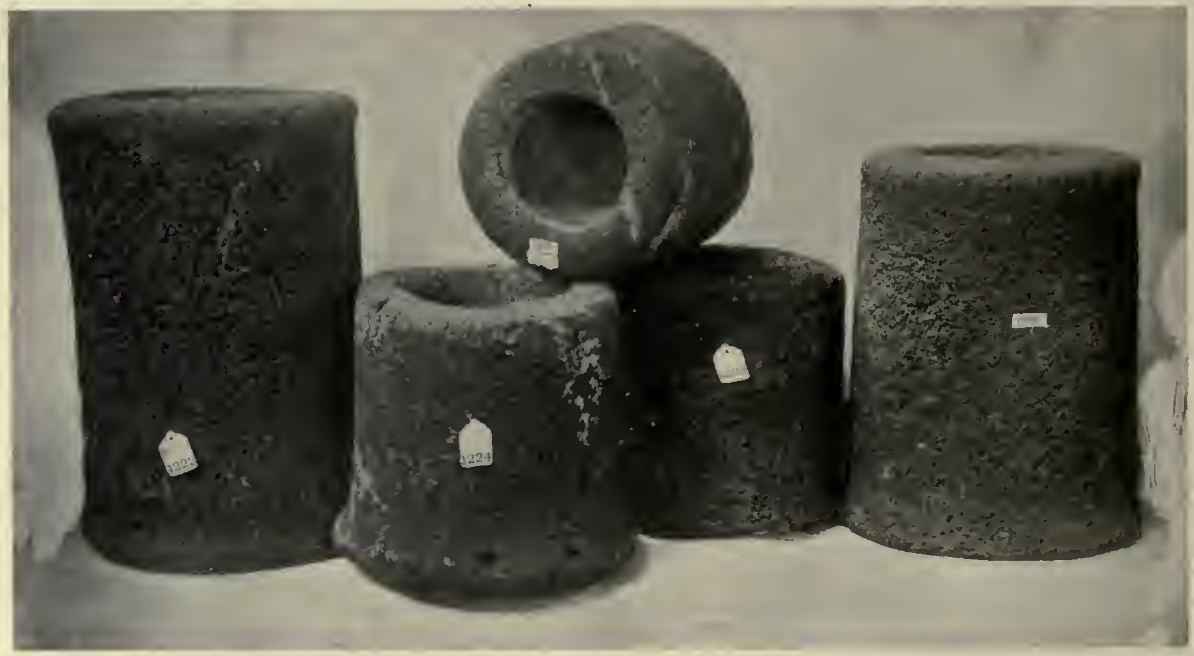

FIG. 28. HAWAIIAN STONE MORTARS.

The shallow cups or dishes to be used with the mullers are shown in Fig. 30. One (2979) is shown in reverse to exhibit the four legs. Most of the others are very shallow and were probably used for the paints for the impression of the bambu stamps on kapa; hence they are abundant, or at least their fragments are, for each kapa maker must have had at least three of these cups when printing. There is little variation in the form as they were objects of utility not ornament. The following table will give the length and weight of the Hawaiian stone pestles shown in the preceding figures:

FIGURE 23.

4483. Rude form, a mere pebble, which has been used considerably, 6.5 in. long, 2 lbs. 8 ozs.
4657. Most finished specimen in the collection, 15.5 in. long, 6 lbs. 2 ozs.
7999. Compact lava, 7.5 in. long, 2 lbs. 8 ozs.
4660. Cellular lava, 9.5 in. long, 4 lbs. 10 ozs.
7947. Compact lava; the broken pestle has been converted into an idol.

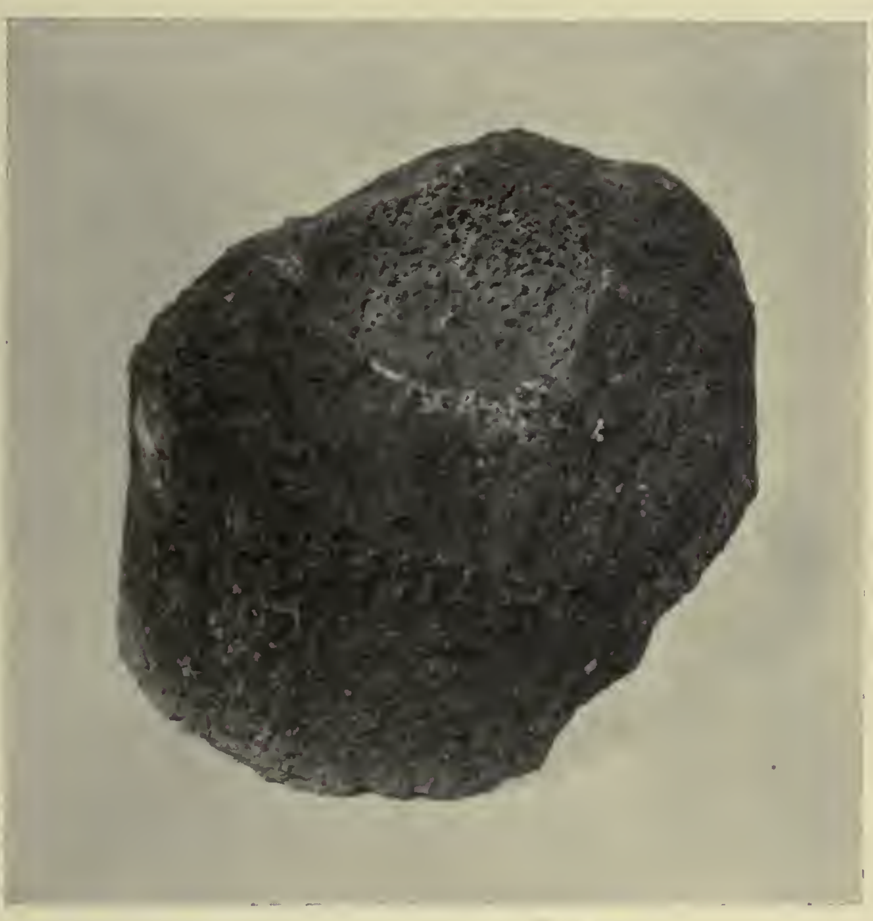

FIG. 29. MORTAR BROKEN IN MAKING.

FIGURE 24.

4652. Cellular lava, round, 12 in. long, weighs 4 lbs. 7 ozs.
4655. Cellular lava, 11.6 in. long, 3 lbs. 4 ozs.
7946. Cellular lava, 11.3 in. long, 5 lbs.
4646. Compact lava, 19.5 in. long, 5 lbs. 7 oz.
4645. Cellular lava, 9.5 in. long, 3 lbs. 12 ozs.

FIGURE 25.

4658. Very compact lava, scored on base, 13.7 in. long, weighs 5 lbs. 13 ozs.
4644. Compact lava flattened, 12 in., 5 lbs. 8 ozs.
4653. Cellular lava, four grooves on base, 11.9 in., 5 lbs. 8 ozs.
4651. Cellular lava, **W** cut on side, 11.5 in., 5 lbs. 3 ozs.
4659. Compact lava, round, 11.5 in., 5 lbs. 7 ozs.

FIGURE 26.

4632. Compact lava, 6.2 in. long, 34.7 ozs.
4633. Compact lava, 6.1 in. long, 42.5 ozs.
4634. Compact lava, 6.7 in. long, 45 ozs.
4635. Compact lava, 7 in. long, 37.2 ozs.
4636. Compact lava, 6.1 in. long, 48 ozs.
4637. Coral rock, 5.6 in. long, 28.5 ozs.
4638. Cellular lava, 5 in. long, 32 ozs.
4639. Compact, well made, 5.7 in. long, 47 ozs.
4640. Compact, 4 in. long, 23 ozs.
4641. Compact, 4 in. long, 23 ozs.
4656. Coarse lava, 4 in. long, 23 ozs.
4114. Elliptical section, 4.5 in. long, 46.7 ozs.

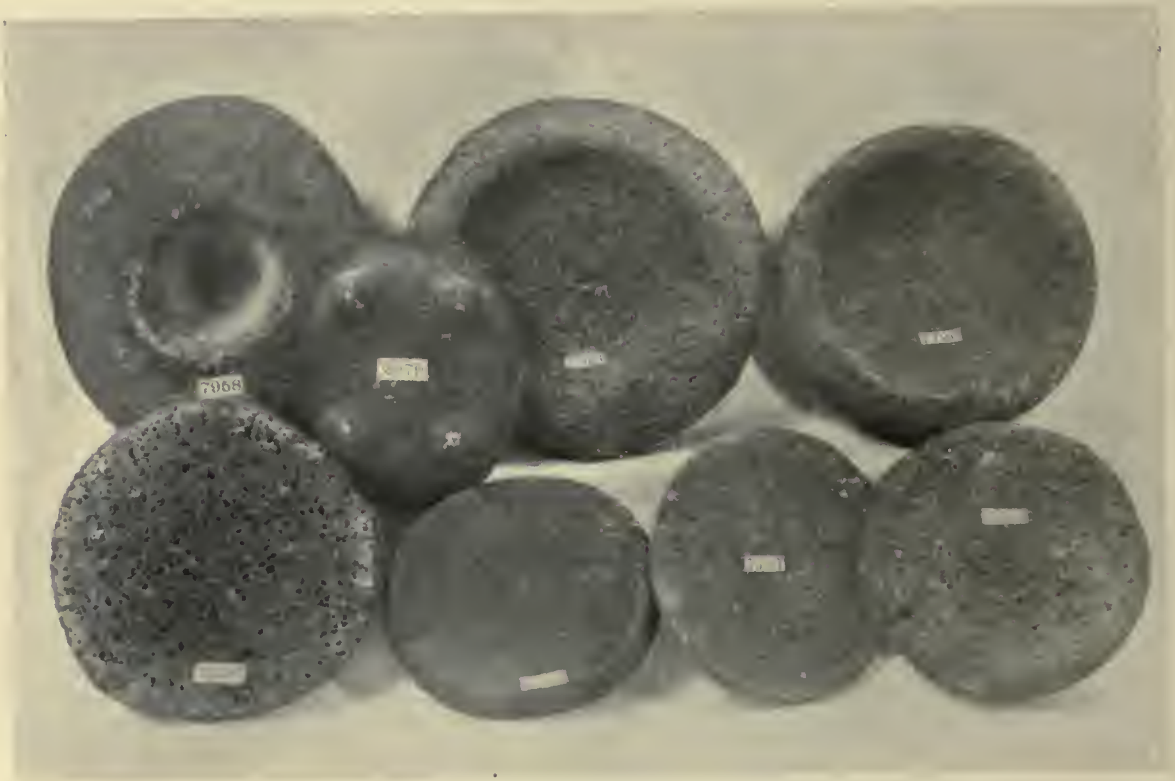

FIG. 30. STONE CUPS USED FOR GRINDING.

PLATE XLI.

4796. Cellular lava, 13.2 in. long, 4 lbs. 2 ozs.
4797. Cellular lava, 15.8 in. long, 6 lbs. 9 ozs.
4798. Cellular lava, 14.7 in. long, 6 lbs. 6 ozs.
5148. Cellular lava, 13.8 in. long, 4 lbs. 5 ozs.

PLATE XLII.

4649. Cellular lava, 13 in. long, 5 lbs. 3 ozs.
4654. Cellular lava, 12.5 in. long, 6 lbs. 8 ozs.
5149. Cellular lava, 11.7 in. long, 5 lbs. 2 ozs.
4647. Cellular lava, 12.7 in. long, 6 lbs.
4650. Cellular lava, 13.4 in. long, 6 lbs. 4 ozs.

Poi Pounders (*Na pohaku kui poi*).—We come now to an implement very prominently identified with Polynesian life: one that had its beginnings with the race and which will perhaps be the last of ancient things to fall from the hands of the dying people. Wherever the making of poi reached there were the stone pounders of one general pattern but with many local variations. Where breadfruit takes the place of kalo, as in some Micronesian islands, the edible substance is pounded with similar pestles of wood or stone. The root of the kalo (*Colocasia esculenta*) is cooked and then pounded on large wooden dishes, with no inconsiderable labor, into a tough and pasty dough which is then in turn diluted with water and allowed to sour as a paste. This is the favorite food among the Polynesians both young and old, and it seems to confute the popular idea that tropical peoples will not by choice do hard work. Certainly poi pounding was the hardest bread-making known among the nations, and the labor fell to the lot of the men alone.

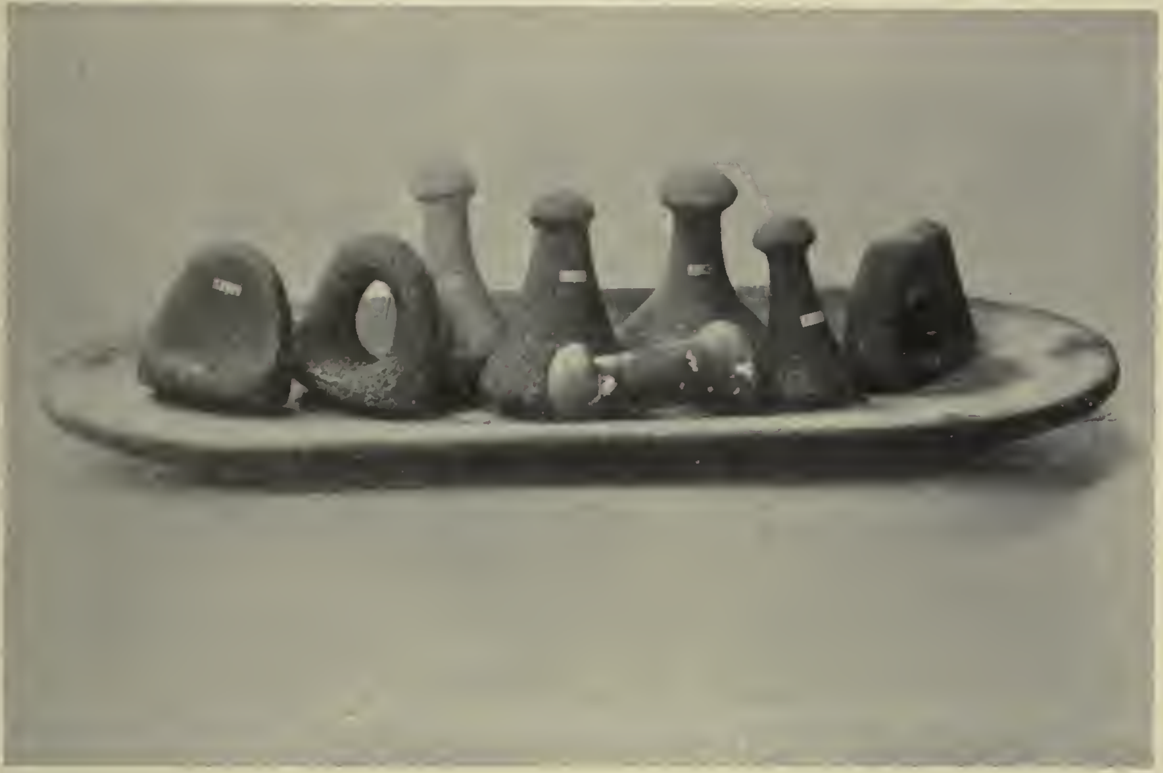

FIG. 31. HAWAIIAN POI BOARD AND POUNDERS.

But it is not so much the work done with these pounders, which will properly be considered in the chapter on Food, as the work expended in making them, and also the variation in forms that we are to study here. Every important group in Polynesia (using poi) had its own pattern, and as they have been somewhat mixed in museums and private collections, a very brief notice of these forms must be given here. The group with which in traditional times the Hawaiians had the closest connection through their long voyages, had a form quite distinct from any known to their visitors, and yet the Tahitian form is often attributed to the Hawaiian islands because the intercourse in the period when the whaling industry flourished in these waters brought many Tahitian things to Honolulu which became a point for their redistribution to the rest of the world. I have traced other Tahitian objects, which in the museums of Europe and America were called Hawaiian, to the fact that the Reverend William Ellis was a missionary in the Society islands until his health suffered, and on his way home to recuperate, he was persuaded to tarry in the Hawaiian islands and help the earliest band of missionaries sent by the American Board of Foreign Missions. His knowledge of the Tahitian dialect enabled him to converse with the closely related Hawaiian, and thus his help was invaluable to the teachers on Hawaii who were struggling to master the language of the people they had come to instruct. Mr. Ellis was more than an ordinary teacher as his most interesting *Tour of Hawaii* in 1821, and his various works on Madagascar prove, and he not only studied manners and customs but collected specimens of the manufactures of the peoples with whom he sojourned, and the collections brought through Hawaii from Tahiti and now in the British Museum mainly, were sometimes confounded with those that Mr. Ellis collected in Hawaii.

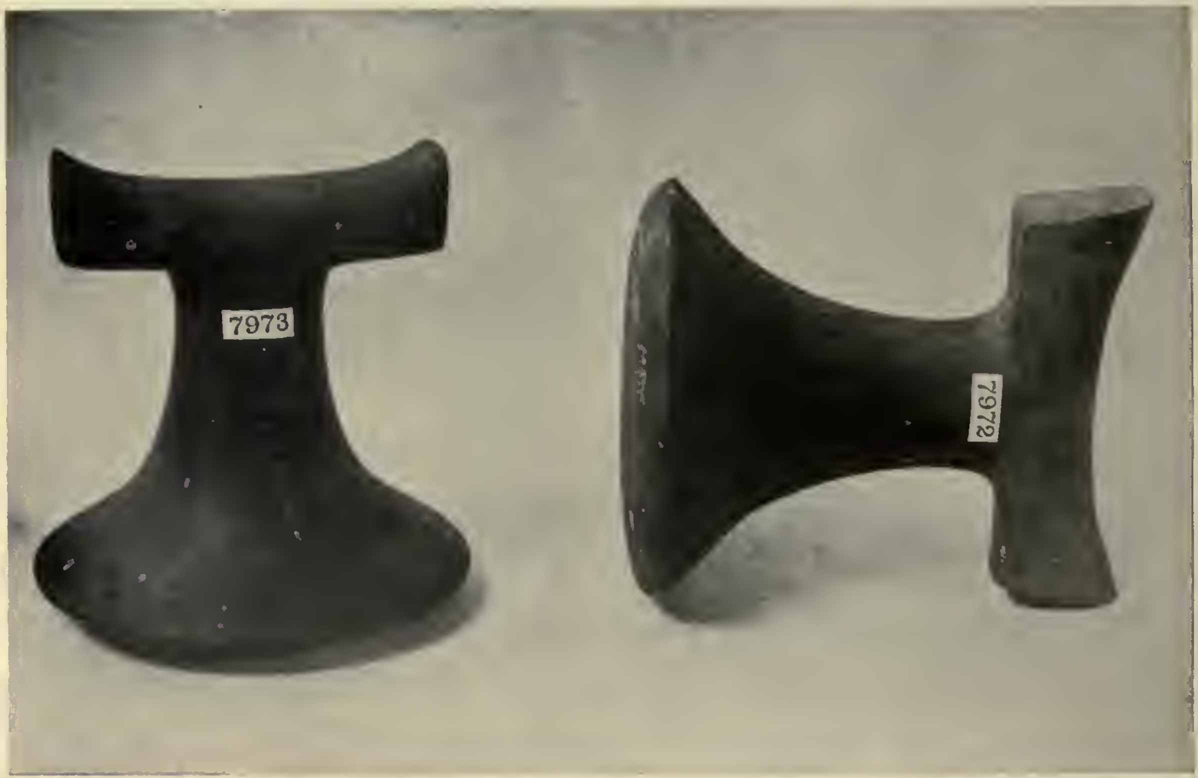

FIG. 32. TAHITIAN POI POUNDERS.

Evidently the Tahitians held their pounders in a different way to the Hawaiian bread-maker for the characteristic cross bar was the handle instead of the cylindrical stem of the pounder. While the cross bar was longer or shorter, and of differing curves, the specimens shown in Fig. 32 are good types of the southern form. Although the Marquesan group is much nearer the Society than the Hawaiian islands the pounder found there more resembles that used on the latter group, and was held in the same way.

Its distinguishing feature, on all the specimens that I have seen, was the small knob at the top which was either simply grooved (8004, 8005) or decorated with a head of the type common in Marquesan art. Both these forms are shown in Fig. 33, and the graceful curve of the stem should be noticed. The artistic outline is closer allied to the Tahitian than to the Hawaiian. A very ancient form of Marquesan pounder now in private hands in Honolulu is shown in Fig. 34. The double head is boldly modelled and the whole finish of the pounder is good. It perhaps favors my belief that the cannibals did better work, and had better taste, than the people who lived on poi and fish; but any one may form his own theory if he has specimens enough of the work of each division of the Pacific islanders to make a fair comparison. To me there is something very cannibalistic in the two faces on this pounder, and I am inclined to believe that the poi pounded with it was often as the bread to the more important meat.

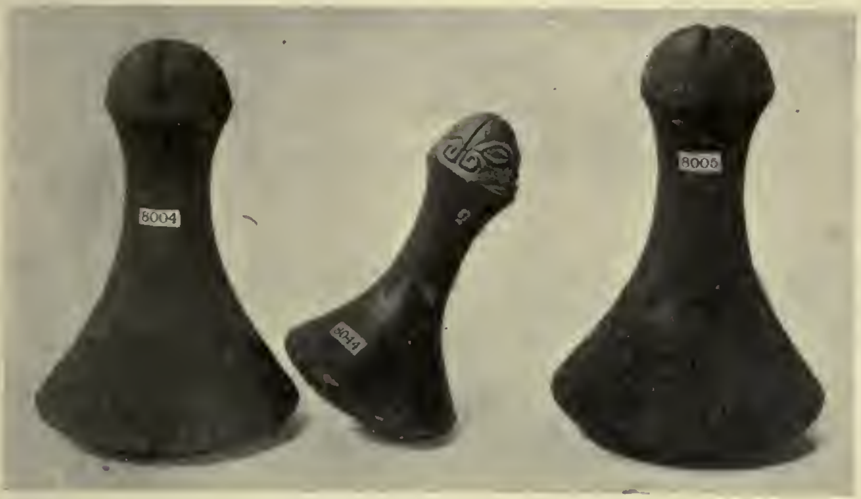

FIG. 33. MARQUESAN POI POUNDERS.

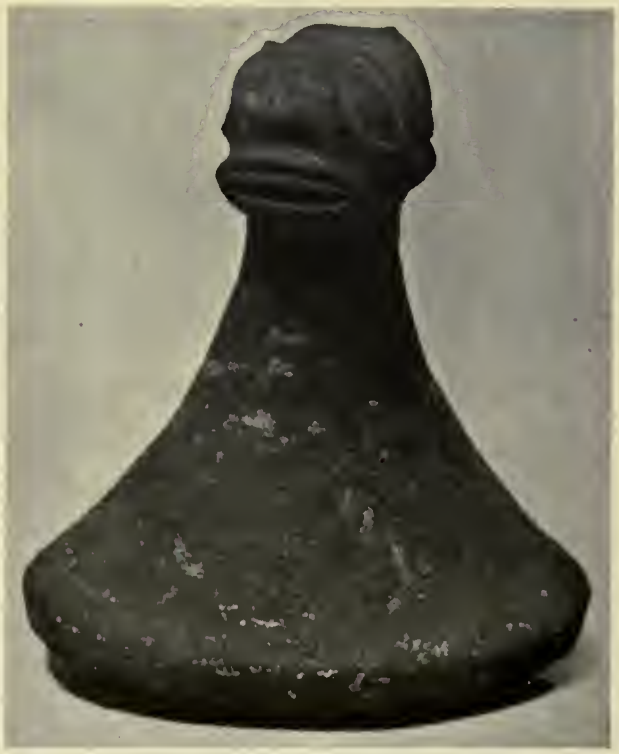

FIG. 34. ANCIENT MARQUESAN POI POUNDER.

The pounders used by the cannibals at the other end of the Pacific region, the Maori, have been already figured (Fig. 22, p. 28). The fern root and hinau berries (*Elæocarpus dentatus*) were generally beaten in a wooden bowl with a wooden pestle, neither of them having any connection with the Hawaiian poi board and pounder. Both the bowl and pestle were often carved in artistic forms as were so many of the humblest implements of the Maori.

Returning to the north Pacific we find in Micronesia a very distinct type of poi pounder. Both the cross bar and the boss have disappeared and a flattened disk terminates the stem otherwise quite like those of the Polynesian islanders already described. On many of the islands of Micronesia no stone is found; coral and coral sand form the solid land and it is common to see implements that on the volcanic islands are made of lava on these atolls made of compact shell, or in the case of pounders, of coral rock solid and ringing. Such are shown in Fig. 35 where the excellent workmanship of the cannibals and the peculiar discoidal top may be seen. One or two conical points are in some cases added apparently for ornament, or it may be to indicate an especial use, as the two specimens (3291, 3292) in the middle of the group have two points and are said to have been used for grinding *taik*, a red pigment greatly prized by the Ruk people.

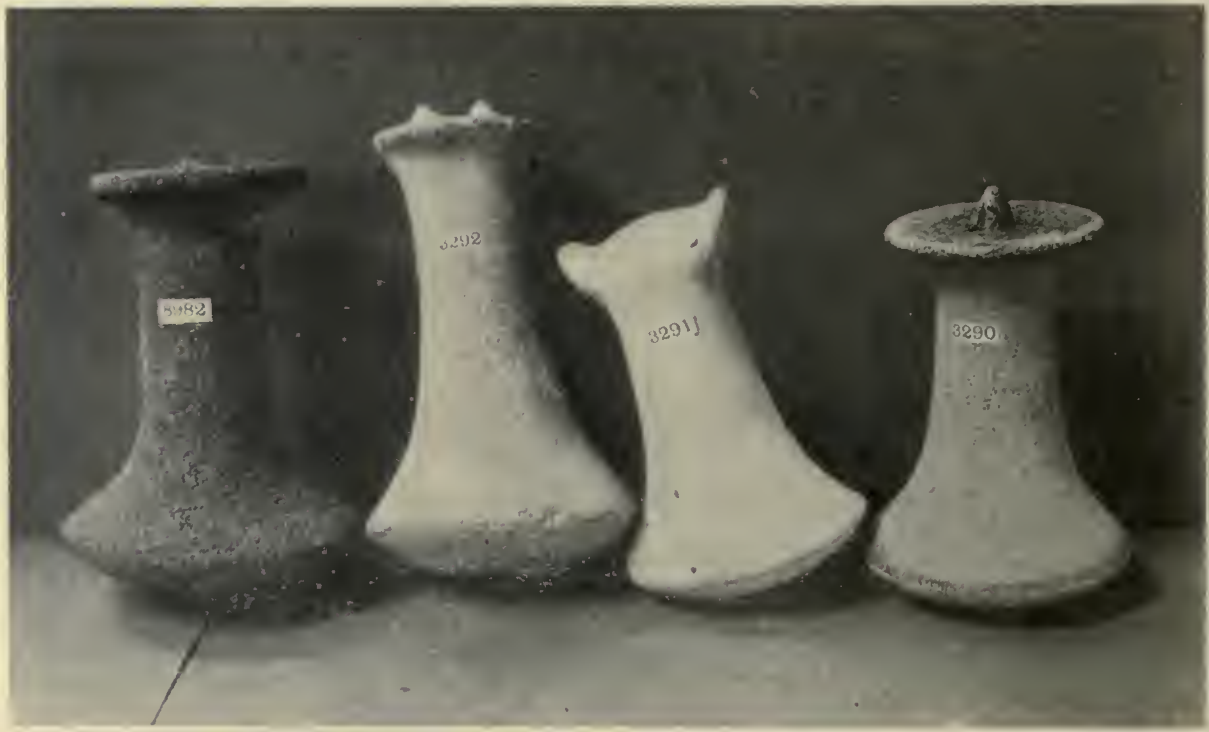

FIG. 35. CORAL ROCK POUNDERS FROM RUK.

Also from the Caroline islands are the two pounders shown in Fig. 36. One (7075) is of wood painted red like many of the Carolinean objects of the same material: the other is of very compact lava and well made. These are used for pounding both kalo and breadfruit.

I am not acquainted with any other form of importance outside the Hawaiian group, but on this group there was a variation in form greater than any of those already seen. However, we are getting on too fast and must return to the very primitive mullers from which have developed all these forms. Any one of the mullers shown in

Fig. 26 would do for poi pounding but they all lack weight and the face surface is not of sufficient diameter to do well the needed pounding. In Fig. 37 we have a conical muller made of coral rock (coral sand conglomerate) which is fairly heavy (4 lbs. 12 oz.), but while it would strike a forceful blow it would not be so easy on the recover, and in spite of the rather rough surface would be likely to slip from the hand. In this case the inventive genius of an intelligent people would soon devise the slender stem and knobbed top. I am able to show the intermediate shape when the stem had been diminished for the better clasping of the hand. Fig. 38 shows a very old muller or pounder found in the ruins of an old heian or temple. It is roughly wrought and indicates an early age or little skill on the part of the maker. It almost gives the impression of a lump of clay being fashioned on the potter's wheel. It is the only one of this form I have seen.

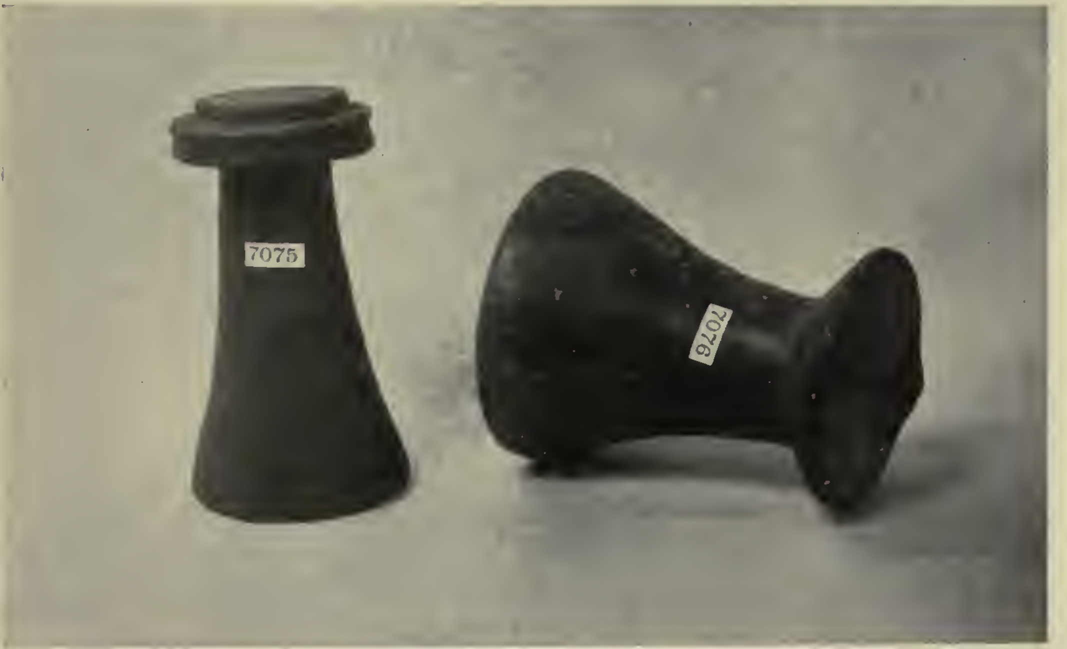

FIG. 36. WOOD AND STONE POUNDERS, CAROLINE ISLANDS.

Let not my reader suppose that I attach much importance to this development of the pounders; there is no chronological sequence so far as known, and while it is easy to arrange intermediate forms, it must be always remembered that we have nothing beyond our imagination to rest upon. We cannot prove that the simple form was not made long after the so-called intermediate for some special purpose. There are no bones of the cave bear or of any other extinct animal with which these stone tools have been found, and except tradition there is no possible help in dating any of the old specimens. Tradition seldom meddles with the common implements of vulgar life, and certainly does not in many of the ones which occupy our attention at present.

I am fortunately able to show how the Hawaiian poi pounder was made, and it is probable that this was the most ancient method. In Hilo in 1888 I found an old native at work with his son fashioning poi pounders for his neighbors and one of the photographs I then took is shown in Fig. 39. Sitting on the porch of his house on a mat (no longer Hawaiian but Chinese), clad in foreign clothes, father and son still retained the native posture and the native methods I had seen a quarter of a century before when a grass house and stone platform had served as background to a bronzed figure clad only in the unobtrusive *malo* or clout, working in the same way for the same end. Only a hard silicious pebble armed with perseverence and patience made products fairly shown in the plates and figures. Now it is said the modern pounders are often turned in a lathe,* and these substitutes are used by the Chinese to prepare the Hawaiian's national food!

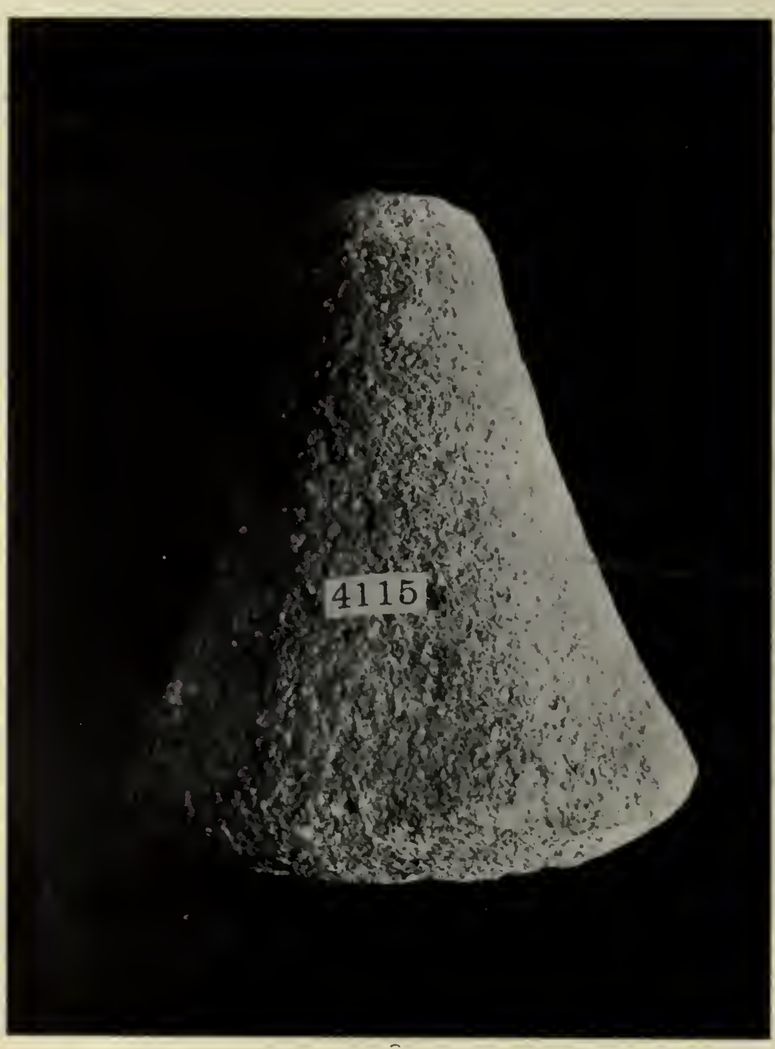

FIG. 37. HAWAIIAN MULLER OF CORAL ROCK.

Not seldom when much of the hard rough shaping is done the work must be abandoned because a flaw is discovered. Two such failures are shown in Fig. 40. The first (No. 8815) looks almost like a model of an eroded mountain for the hard pebble has cut away the stone much as the torrent washes out the valleys. The first stage was nearly finished. In the second example (No. 8043) more progress had been made: the concavity of the sides was marked and the face was nearly complete when the great crack from side to side appeared and the disappointed workman threw the block on to the refuse heap whence it found its way into a stone wall where the rejected stone was selected from the whole wall for the lesson it could teach.

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*I have recently seen tolerable poi pounders cut with a short-handled axe. It took nearly a day, and the result was rough.

I have wondered whether the Hawaiian priesthood was enough like other priesthoods to cling tenaciously to the use of ancient implements as well as forms. I have no information at first hand on the matter, for the priests had ceased to perform their functions, at least in public, before my day, but in the ruins of a temple on the slopes of the Kaala range on Oahu, were found by Messrs. Bryan and Seale of the Museum staff, several pounders of antique form two of which are shown in Fig. 41. No. 10,031 is made of a lava closely resembling stratified sandstone, and is considerably flattened. No. 10,032 is of a curiously shortened form. Both bear marks of long use. The *Alii* or Chiefs were particular about their poi pounders, carrying their own on journeys, and some of the *Moi* or Kings placed a kapu on their private pounders. In the Bishop Museum is the "sacred" pounder of the great Kamehameha, a small form easily carried on a journey or war-like expedition. It escaped being photographed as it was in the case with relics and not with the other more plebeian pounders. Under the circumstances the priests, who by this same kapu ruled the Kings, probably were equally particular about their own pounders.

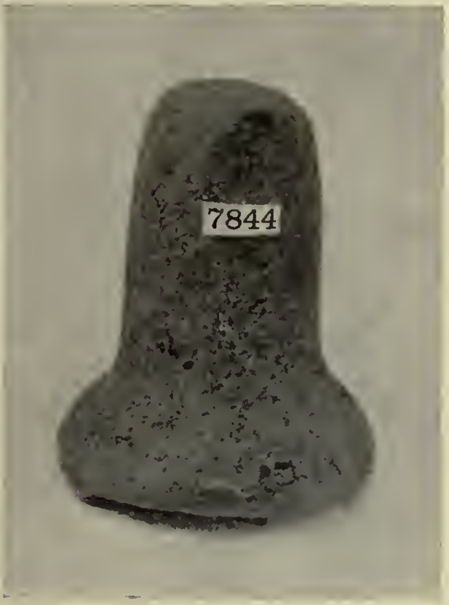


FIG. 38. ANCIENT HAWAIIAN POI POUNDER.

Another native custom had its influence on the size if not the form of some pounders. The *maka ainana* or people, as distinguished from the chiefs and clergy, had neither any property nor any rights that their rulers were bound to respect.

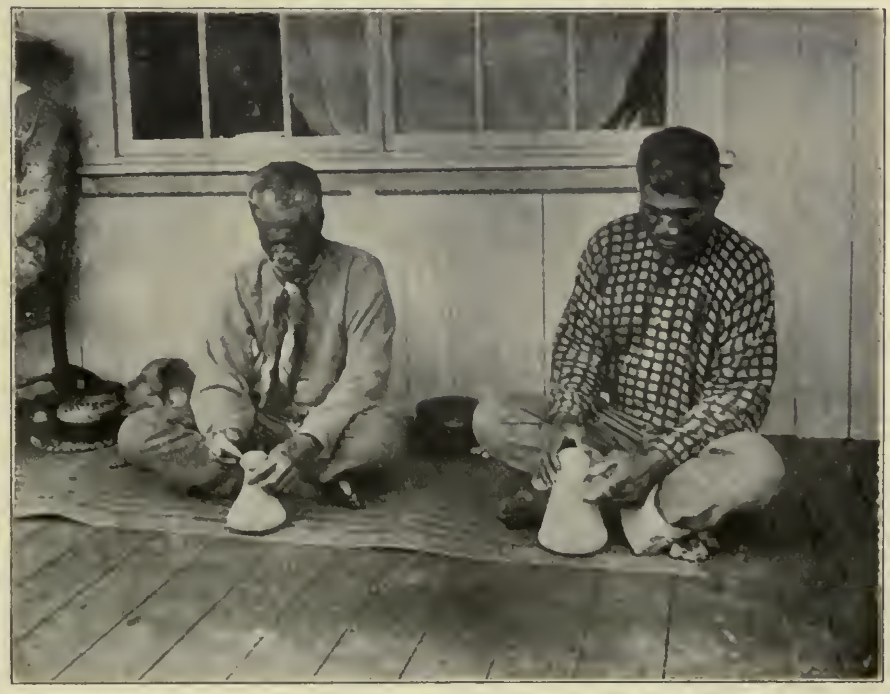


FIG. 39. HAWAIIANS MAKING POI POUNDERS.

Everything belonged to the King. The Hawaiian saying "*O luna*, *o lalo*, *kai*, *o uka a o ka hao pae*, *ko ke 'lii*" (All above, all below, the sea, the land, and iron cast upon the shore, all belong to the King) was so true that if a chief heard the noise of pounding poi, and was hungry, he could take the poi from the commoner to satisfy his own hunger even if he left the poor fellow starving. This was sufficiently common in practice to induce the making of pounders of smaller size that would not betray the preparation of food by the noise. *Na pohaku kui poi malu.* Such are several of the pounders shown in Figs. 43 and 44, and these lighter forms were the ones carried by the servants of a chief on a journey.

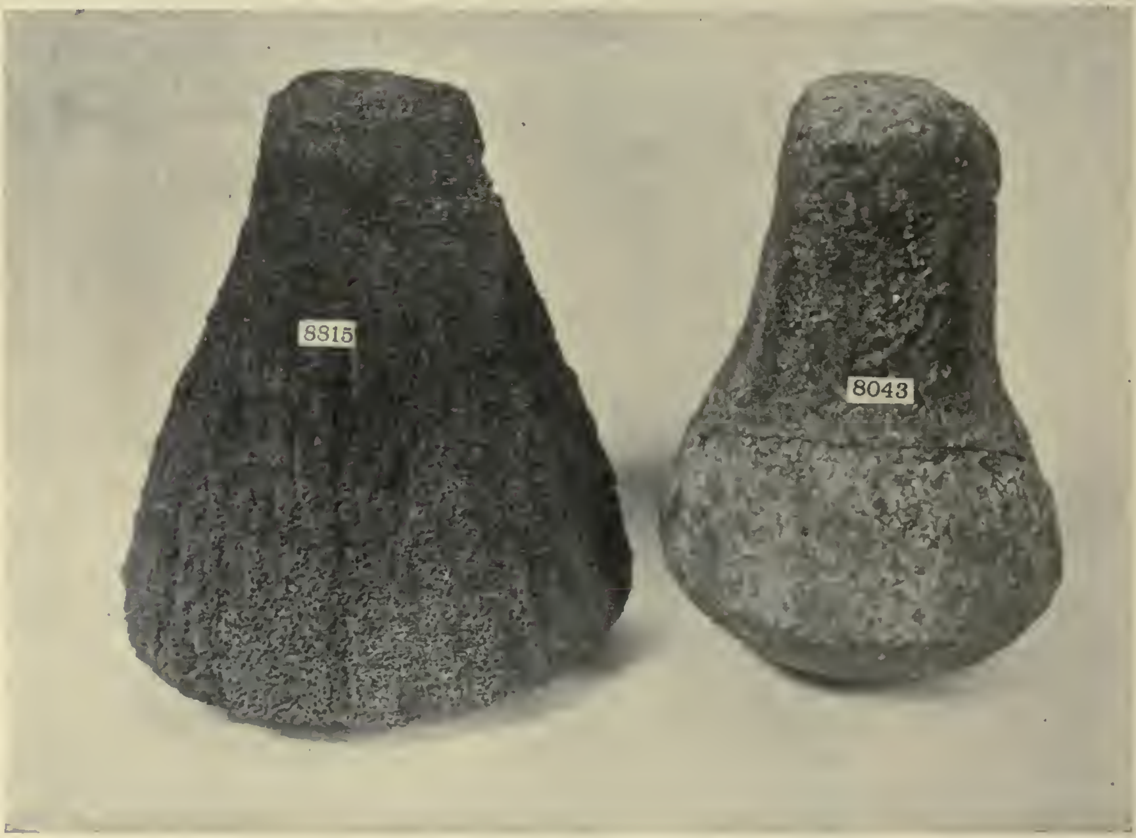


FIG. 40. UNFINISHED POI POUNDERS.

On the island Kauai are found two peculiar forms: one in its various modifications is shown in Plate XLIV.: the other in Plates XLV. and XLVI. Both of these forms are two-handed and the process is rather grinding than pounding. They were preferred for grinding the barks and berries used in dyeing kapa. The stirrup form may be regarded the older, certainly the easier to make, and the ring form (*pohaku kui puka* or *pohaku puka*) may have developed from this by wearing through the concavity. This ring form is found among the old corn grinders of Mexico, and so closely do these two remote implements resemble each other that I have seen in one of the principal ethnological museums of Europe a genuine Hawaiian ring poi pounder labeled as a Mexican corn grinder. Both are made of similar lava. In Plate XLIV. the unusual form shown at the extreme right of the group (No. 6820) is a cast kindly sent me by Professor Frederick W. Putnam, the distinguished Curator of the Peabody Museum of American Archæology at Cambridge, Mass., in whose charge is the unique original. It shows more elaborate design than any I have seen, although the projections on the upper corners, so convenient for the thumbs, are indicated on No. 4113 of the same plate. I have never seen these stirrup pounders in use. The ring pounders seem to have become obsolete in more recent times, perhaps because the Chinese, who pound much of the poi, prefer the common conical form of Fig. 42. The methods of holding the ring pounders, according as they are used for pounding (A) or grinding (B) is shown in Fig. 45. This was the usual, although the workmen doubtless varied the grip as their wrists became wearied, and different natives have shown me other methods as the only ones they ever knew. All such information is of little value.

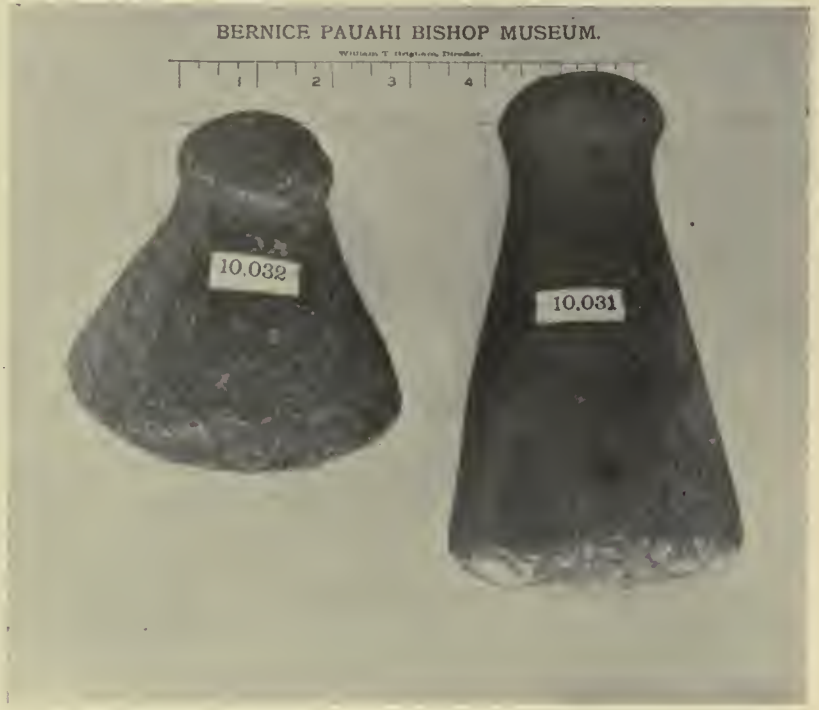


FIG. 41. ANCIENT HAWAIIAN POI POUNDERS.

The very limited range of these stirrup and ring pounders is noteworthy. The island Kauai was not remote from the rest of the group, nor were her inhabitants hostile generally. That intercourse was not so common as between the islands to the southeast is shown by the provincial forms of words, the use of the sound represented by k instead of that represented by t more generally on Kauai (a-Tooi of Cook) than on the other islands, and other dialectal peculiarities not necessary to discuss here. Notwithstanding there was a considerable intercourse and interchange of merchandise between the people of Kauai and even the distant Hawaii. Peculiar forms of kapa made only on the former island have been found buried in ancient caves in Kohala, Hawaii, but I do not remember that any poi pounders of the forms in question have ever been found on Hawaii. I am at a loss to explain the non-distribution and I cannot find that their use extended beyond the island of Kauai. When I first visited that island in 1864 they were already obsolete and were shown as curiosities.

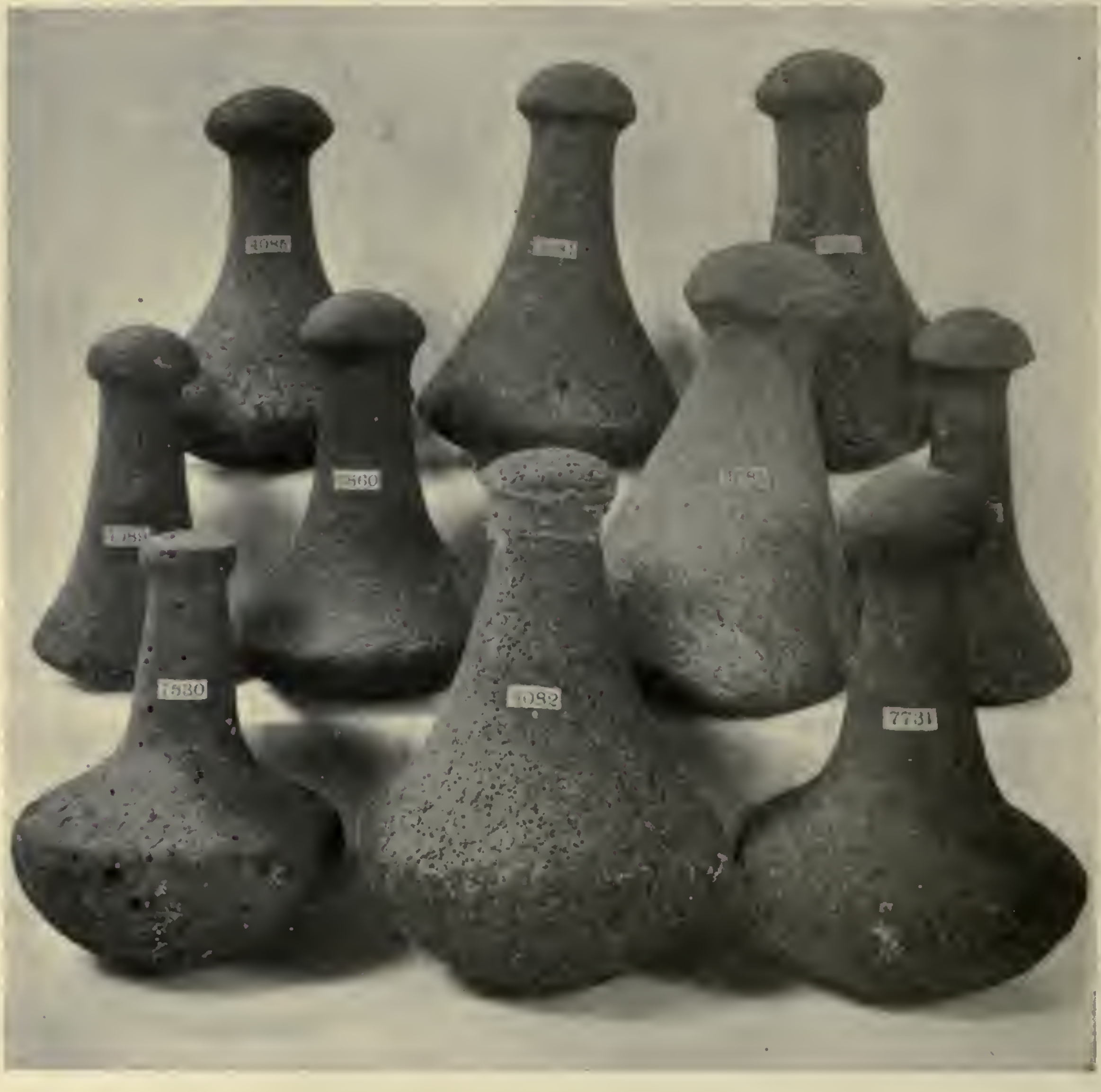


FIG. 42. HAWAIIAN POI POUNDERS.

That the reader may obtain a better idea of the size and weight of these "bread makers" I give here a list of those figured, with their weight, height and the diameter at the largest end.

FIGURE 42.

4085.	5 lbs. 8 oz., 8 in., 5.7 in.	4083.	9 lbs., 9 in., 5.6 in.
4081.	5 lbs., 8.2 in., 5.5 in.	4093.	2 lbs. 13 oz., 7.2 in., 3.8 in.
4084.	3 lbs. 4 oz., 8.5 in., 5.8 in.	7530.	6 lbs., 7.2 in., 5.7 in.
4089.	2 lbs. 13 oz., 6.8 in., 3.7 in.	4082.	7 lbs. 10 oz., 8.8 in., 6.1 in.
6860.	5 lbs. 4 oz., 8 in., 5.5 in.	7731.	6 lbs. 2 oz., 8.5 in. 5.9 in.

FIGURE 43.

4096. 4 lbs., 7.5 in., 4.7 in.
4097. 3 lbs. 3 oz., 6.2 in., 3.3 in.
4091. 4 lbs. 8 oz., 7.1 in., 5 in.
4092. 2 lbs. 1 oz., 6.5 in., 3.1 in.
4086. 4 lbs. 12 oz., 7 in., 5 in.
4099. 2 lbs. 5 oz., 6 in., 3.5 in.
4080. 6 lbs. 4 oz., 7.8 in., 5 in.
4106. 3 lbs. 12 oz., 7 in., 4.6 in.
4094. 3 lbs. 7 oz., 7.5 in., 4.4 in., coral.
4105. 2 lbs. 12 oz., 5.7 in., 4.2 in.
4103. 1 lb. 13 oz., 5.1 in., 3.1 in.
7736. 3 lbs. 14 oz., 7.6 in., 4.5 in., coral.
4088. 2 lbs. 14 oz., 6 in., 4.1 in.
4090. 5 lbs. 8 oz., 8.7 in., 5.9 in.
4079. 10 lbs. 9 oz., 10 in., 6.7 in.*

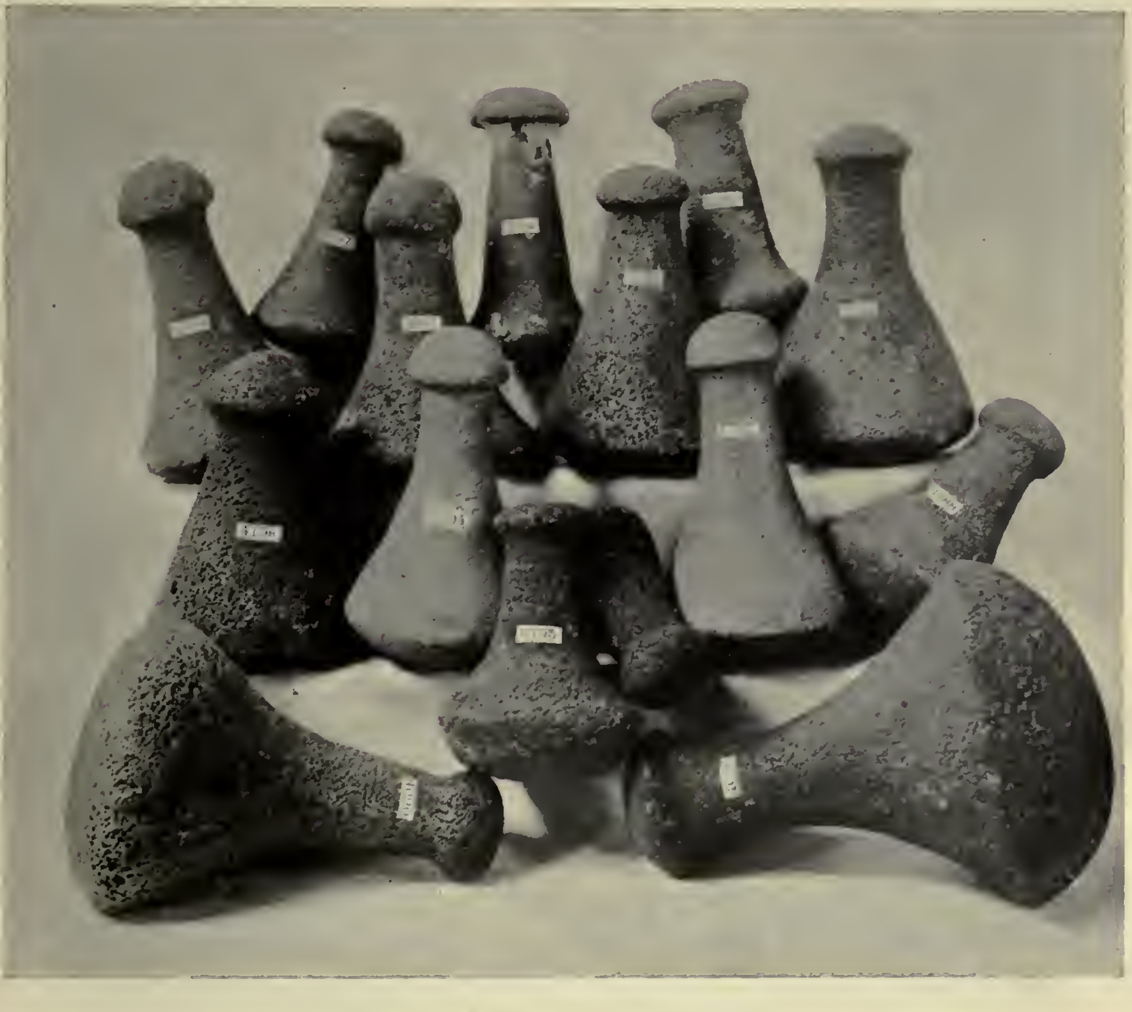


FIG. 43. HAWAIIAN POI POUNDERS.

FIGURE 44.

4087. 2 lbs. 14 oz., 6.6 in., 4.2 in.
4100. 1 lb. 12 oz., 5.1 in., 3.7 in.
4103. 1 lb. 13 oz., 5.2 in., 3.2 in.
4098. 2 lbs. 3 oz., 5 in., 3.8 in.
4095. 2 lbs., 5.6 in., 3.2 in.
4104. 1 lb. 8 oz., 5.5 in.
4241. 3 lbs. 10 oz., 4.1 in., 4.6 in.
4101. 2 lbs., 5.2 in., 3.5 in.

PLATE XLIV.

4112. 4 lbs. 4 oz., 5.2 in., 4 in.
4113. 2 lbs. 5 oz., 4 in., 3.8 in.
4110. 3 lbs., 4.7 in., 3.5 in.
4108. 2 lbs. 1 oz., 4.5 in., 4.1 in.
4116. 2 lbs. 14 oz., 5 in., 4.1 in.
4109. 4 lbs. 5 oz., 5.2 in., 5 in.
6820.†

* This is the largest specimen in the Bishop Museum, and the largest I have ever seen.

† This is a cast of the specimen in the Peabody Museum. I have not the weight of the original stone, but as my memory serves it is heavier than the average of the stirrup pounders.

In the ring poi pounders the abrading surface is elliptical, so in addition to the height, which is rather less than in the conical pounders, the major and minor diameters of the base are given, and as most all of the specimens are damaged on the periphery these diameters are given as nearly as possible as before the chipping took place. The methods of holding these pounders is shown in Fig. 45, where A shows the position for pounding, B the position for grinding.

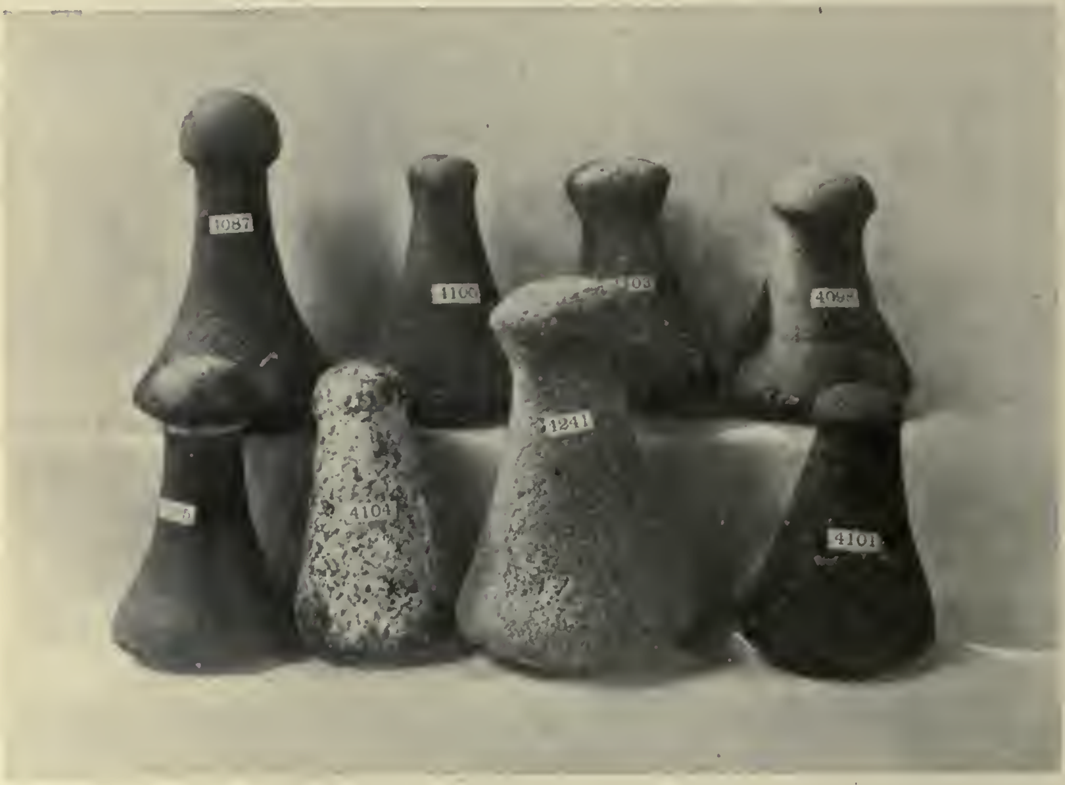


FIG. 44. HAWAIIAN POI POUNDERS.

PLATE XLV.

4120.	4 lbs. 10 oz., 6.2 in., 5.7×3.5 in.	4131.	4 lbs. 14 oz., 5.8 in., 6.4×3.5 in.
4132.	4 lbs. 2 oz., 6 in., 5.5×3.2 in.	4133.	5 lbs. 11 oz., 6 in., 6.6×4.6 in.
4138.	5 lbs. 6 oz., 5.9 in., 5.7×3.8 in..	4121.	3 lbs. 12 oz., 5.7 in., 6.4×4.2 in.
4126.	3 lbs. 3 oz., 5.5 in., 5.2×3.2 in.	4137.	3 lbs. 9 oz., 5.5 in., 6.1×3.8 in.
4130.	5 lbs., 6.4 in., 6.6×4 in.	4139.	3 lbs., 5.4 in., 6.2×3.4 in.

PLATE XLVI.

4129.	2 lbs. 10 oz., 5.2 in., 6.2×4 in.	4124.	2 lbs. 14 oz., 5.1 in., 5.5×3.2 in.
4128.	1 lb. 14 oz., 4.8 in., 5.2×2.3 in.	7954.	2 lbs. 1 oz., 5.1 in., 5.5×3.2 in.
8000.	3 lbs., 5 in., 5.2×3.2 in.	4134.	1 lb. 5 oz., 3.9 in., 4.1×2.7 in.
4119.	4 lbs., 5.9 in., 5.9×3.2 in.	4118.	4 lbs. 10 oz., 5.7 in., 6×3 in.
4122.	3 lbs. 8 oz., 5.4 in., 5.7×3.2 in.	4239.	2 lbs. 15 oz., 5.5 in., 5×3.1 in.
4127.	4 lbs., 5.1 in., 5.9×3.4 in.	4123.	3 lbs. 10 oz., 5.5 in., 6.1×4 in.
4125.	3 lbs., 5.1 in., 5.4×3.7 in.	7955.	3 lbs. 14 oz., 5.2 in., 6.7×3.9 in.

From these last tables it will be seen that the ring pounders are lighter than the others.

The two pounders shown in Fig. 46 are of unknown use. No. 4140 is flat with a slightly thicker grinding edge which shows signs of use. The upper part seems fitted for some sort of handle; certainly it could not conveniently be held in the hands from its small size (only 4.6 in. high). Natives have been unwilling or unable to give any information about it; to those I have questioned it is evidently a *res ignota*. I may add that it was dug up on Kauai, that island of odd pounders. The other pounder (4135) conveys to me the impression of a stirrup pounder partly converted into a ring pounder. As may be seen in the illustration it has convenient notches for thumbs on top and the perforation is rough and unfinished. This also has been used, perhaps before the alteration. A harder enigma is presented

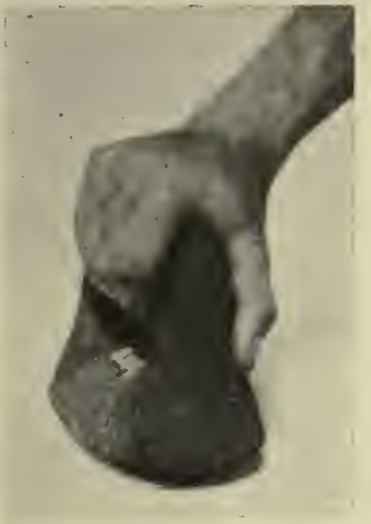


FIG. 45A.

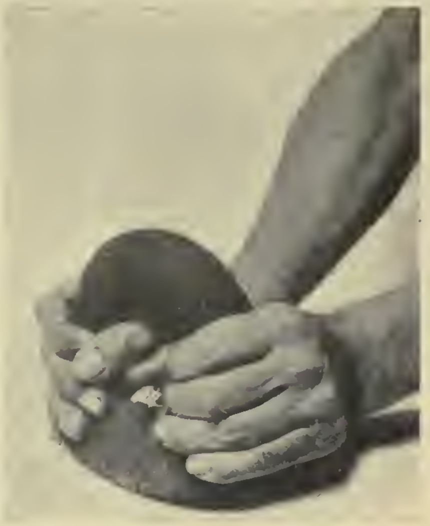


FIG. 45B.

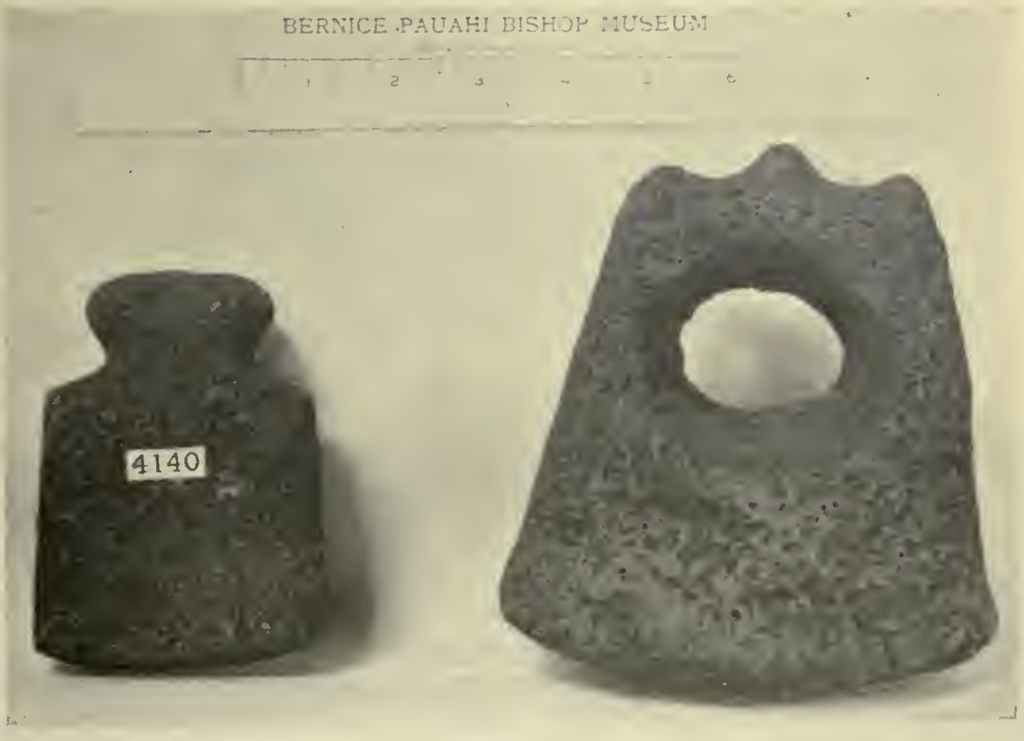


FIG. 46. STONE POUNDERS.

in Fig. 47. Is the worked stone a pounder? Why the great labor expended on the very peculiar form? I confess that I cannot answer these questions with any satisfaction, nor does the little known history of the stone help in the least; it only indicates a native belief in its antiquity. The story is otherwise a curious one. In 1895 a native kahuna or priest was making offerings to a modern stone idol, for an important object which I am requested not to mention. He had spread the mat for the oblation, covering it with red cotton cloth (Turkey red), the color used in idol worship, and upon this was placed the stone god flanked by a bottle of whiskey and one of gin. Fresh fern leaves and dried awa root were before the god, and as the incantation requires some link to the ancient times, the older the more efficacious, this stone implement (No. 7660), treasured long in the family of the priest, was placed in one corner of the sacred mat; a large smooth pebble, *Ulu a Lewalu*, regarded as of divine nature (a sort of *aumakua*), was placed opposite, while between these venerable assistants were strewed *imitations* of old fish hooks, leiomano, etc. The god forsooth was not expected to detect these forgeries! The kahuna, divested of his ordinary clothes, donned a small triangular silk apron, and during the rites fell dead. The people in the house not being accomplices in these heathen proceedings, were yet unwilling to have the unhallowed machinery under their roof and sent the whole outfit (including the gin and whiskey bottles *empty*, also fern leaves and awa unwithered) to

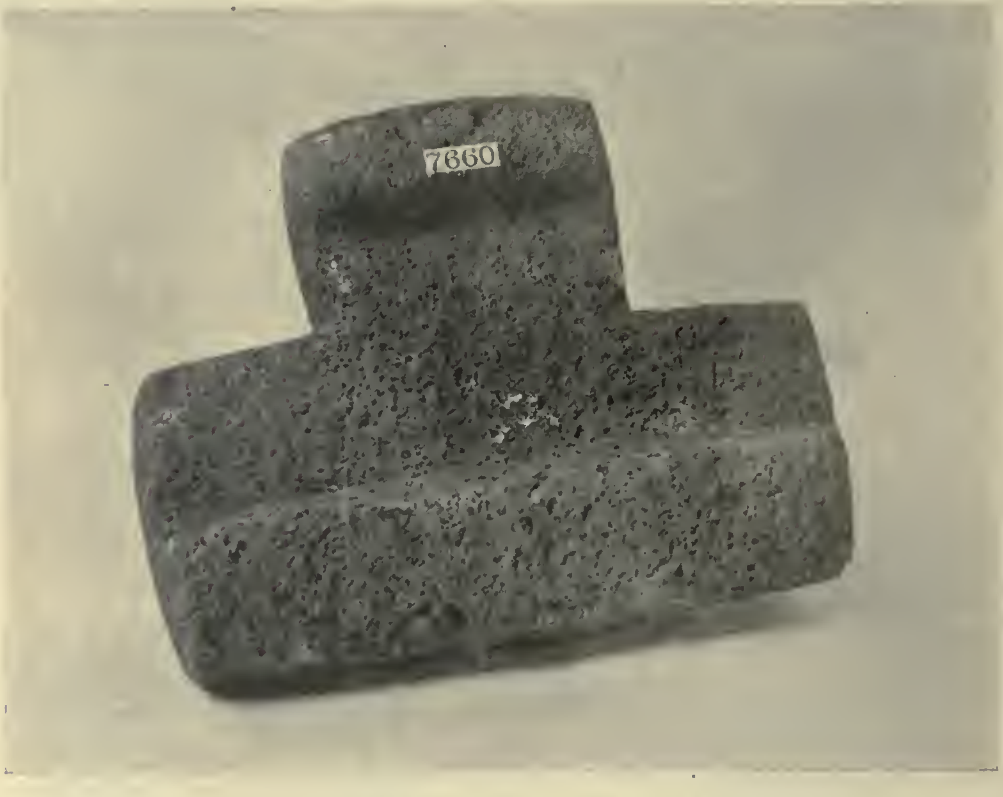


FIG. 47. HAWAIIAN STONE IMPLEMENT.

the Bishop Museum where it is now on exhibition. Now in the opinion of this kahuna, who was a fairly intelligent native, the stone was of sufficient antiquity to have become sacred, to have acquired a certain *mana* or divine power, although I do not believe he could have explained its original use.

Kapa Pressers.—A form allied to the ring pounders, or even more to the Mexican corn grinders already mentioned, and one sometimes confounded with the former by collectors, is that shown in Fig. 48. The three rather clumsily wrought stones were used for pressing the moist kapa or bark cloth. I have never seen them used, and certainly they were not a necessary part of the clothmaker's machinery for they are rare and doubtless were generally replaced by smooth stones or blocks of wood.

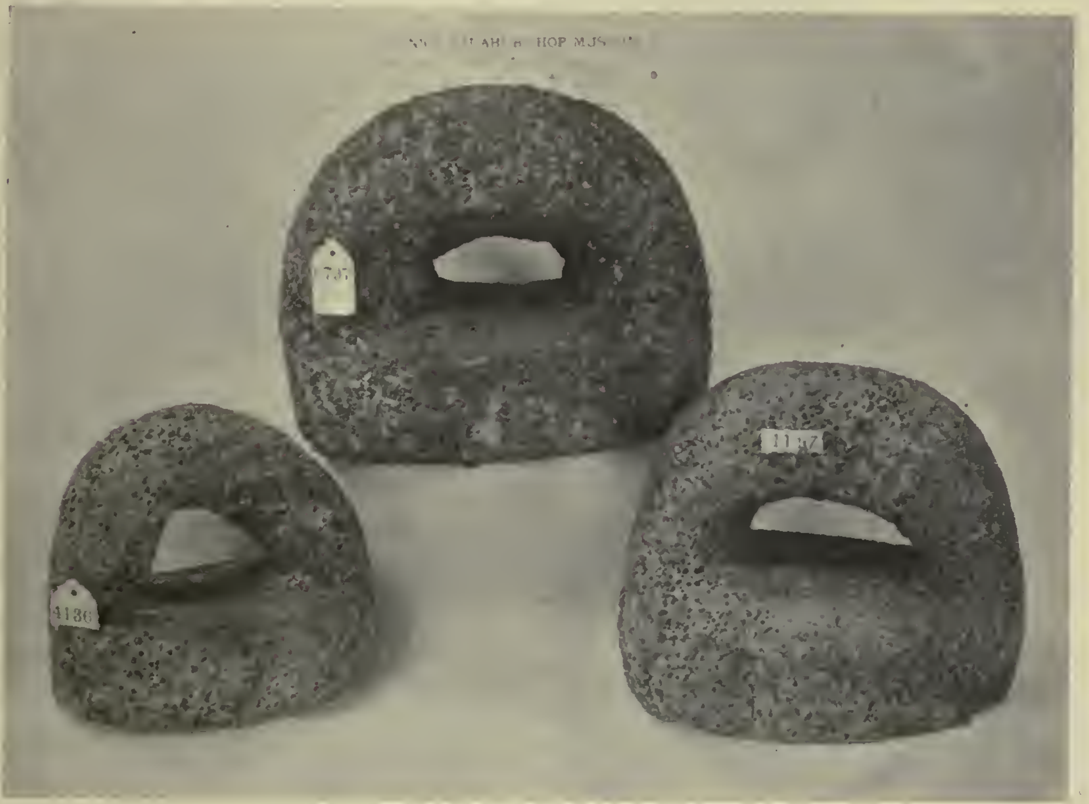


FIG. 48. KAPA PRESSERS.

Stone Dishes.—While for ordinary dishes wood was the more suitable material, and in the chapter on Household Utensils it will be seen that the Hawaiians had large bowls (*Umeke*) and flat dishes of suitable size and form for dog or fish, they also made use of stone dishes and in the Bishop Museum are several such dishes and bowls that will here be figured and described.

We have the rudest form of platter, at first sight almost a mere beach pebble worn by the waves but not cut by human hand, but close examination shows some shaping and also use. The bottom is much rougher than the top which is shown in Fig. 49. If it is to be considered a worked stone certainly a modicum of labor was expended by the maker. Its use may be surmised from what we know of the few other stone dishes that remain. Before some shapeless idol in some one of the many *heiau* erected to the god of this or that *hui* or company of fishermen on some prominent cliff overlooking the fishing ground, this stone was perhaps the platter for the offering of fish which was to decay rapidly before the unsmelling nostrils of the fish god. In those bleak and storm-swept places wood would not last long.

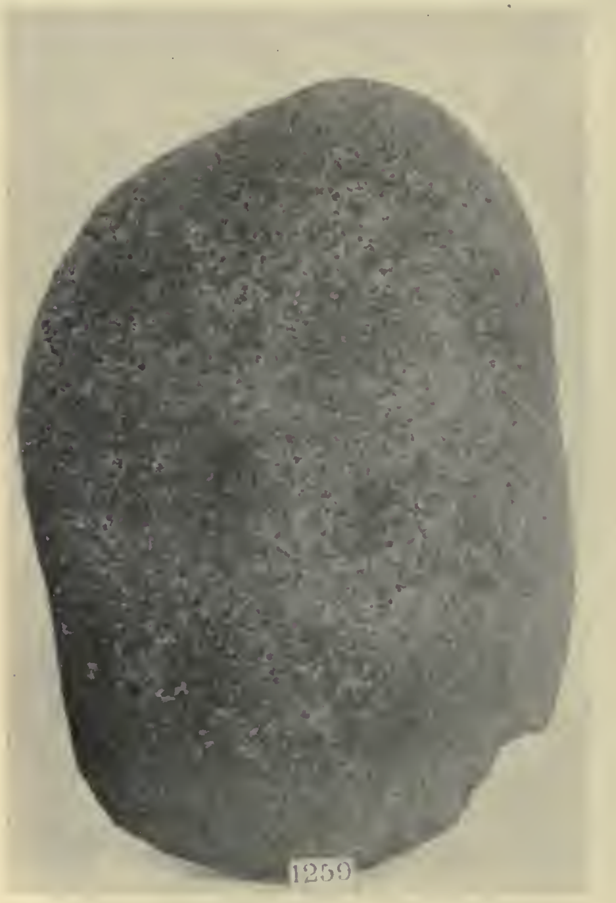


FIG. 49. HAWAIIAN STONE DISH.

A well-finished bowl of sandstone comes next and presents several peculiarities. The thick upper edge is perfectly flat and the bottom spherical with a sort of "punty" mark as if a knob had been broken from its centre. If found elsewhere it might pass for the cover of a cinerary urn. It was found built into a dry stone wall at some distance from recent habitations. Altogether it does not possess a common Hawaiian physiognomy. The material is a homogeneous coral sandstone from Oahu, quite the same that many poi pounders were made from. It is slightly chipped on one edge. Fig. 50, No. 1257. In Fig. 51 we have a distinct dish (8580), rude indeed but definitely a dish, and as it was discovered on Molokai in a temple, and as tradition locally vouched for its original use, we need not hesitate to class this with the vessels of the sanctuary. It held the smaller offerings and is of compact lava about twenty inches in diameter. In the chapter on Worship the use of these stone receptacles will be fully discussed; here it is only necessary to show that the Hawaiians made them. A more definite temple dish, if dish it should be called, is shown in Fig. 52 (No. 6796). It was found on Molokai and is well known to be the offertorium of a rude stone fish-god which is with it in the Bishop Museum. Its form is peculiar in that it is very thick (6 in.) in proportion to its diameter and has a projecting band around most of its circumference interrupted only by the handle-like projection on which the idol rested. The greatest diameter including this band is 13 in., the least 10.5 in.

Stone Bowls.—We come now to two pots or bowls differing in shape but having this in common that they were both found on uninhabited bird-islands of the Hawaiian group, where their use was probably identical although we do not know what that was. The first one, Fig. 53, No. 7449, was found on Necker island with the curious stone images described below and figured in Pl. LXII. It is so whitened with guano that it resembles concrete. Originally 8 in. high and 7.8 in. in diameter, the upper rim has been broken away and there is a small hole broken in the bottom. The inside diameter is 6.5 in., so the wall is very thin. The shape is unlike any other Hawaiian vessel known to me. It is well suited for a container, the walls being too thin for a mortar. With the images it was given to the Bishop Museum by Hon. Geo. N. Wilcox. The other bowl (No. 5593) presents an elliptical section (7.5×6 in.) and is 6.7 in. high: it weighs 8.2 lbs. It has even thinner walls and has a considerable piece

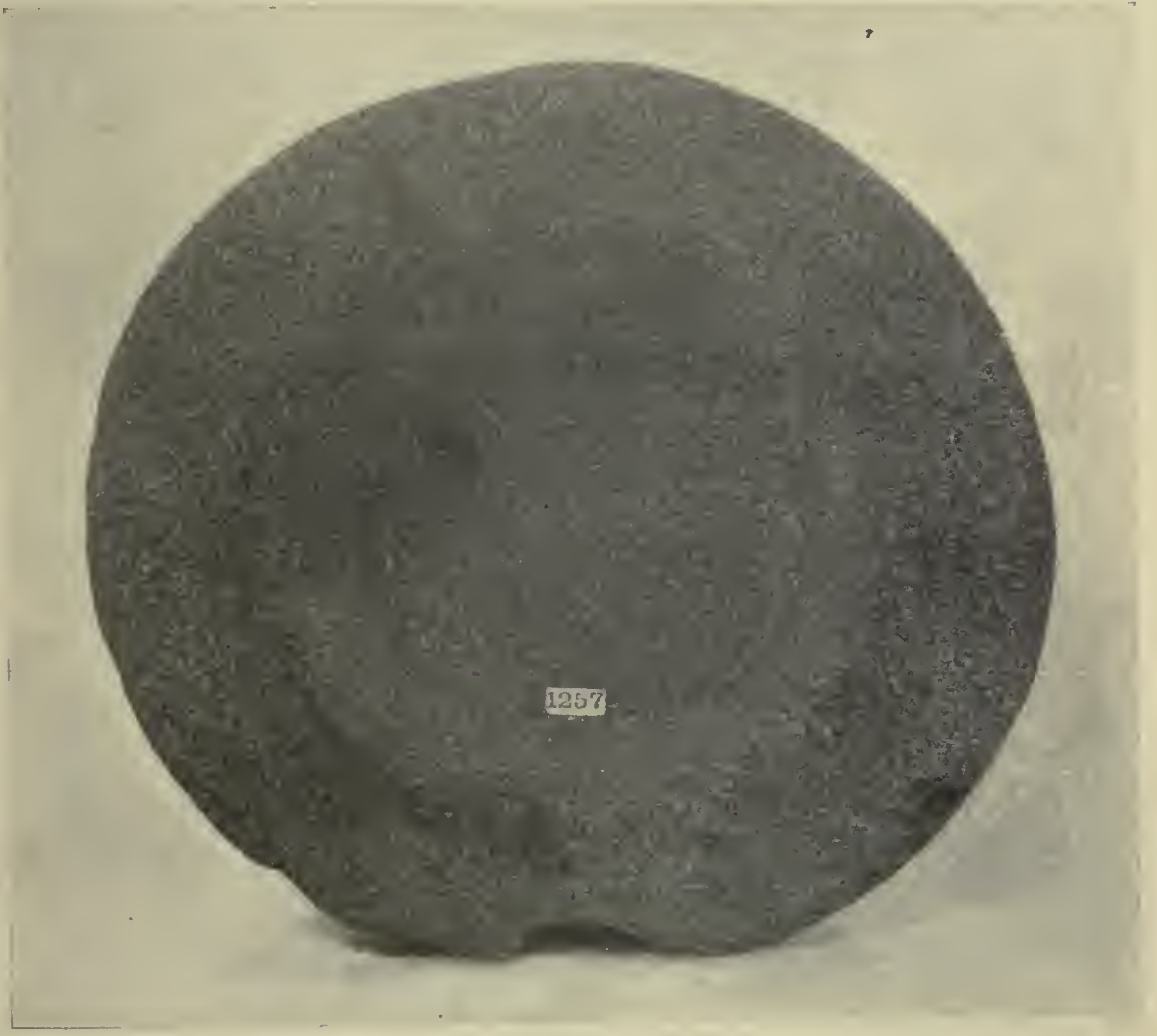


FIG. 50. HAWAIIAN DISH OF CORAL SANDSTONE.

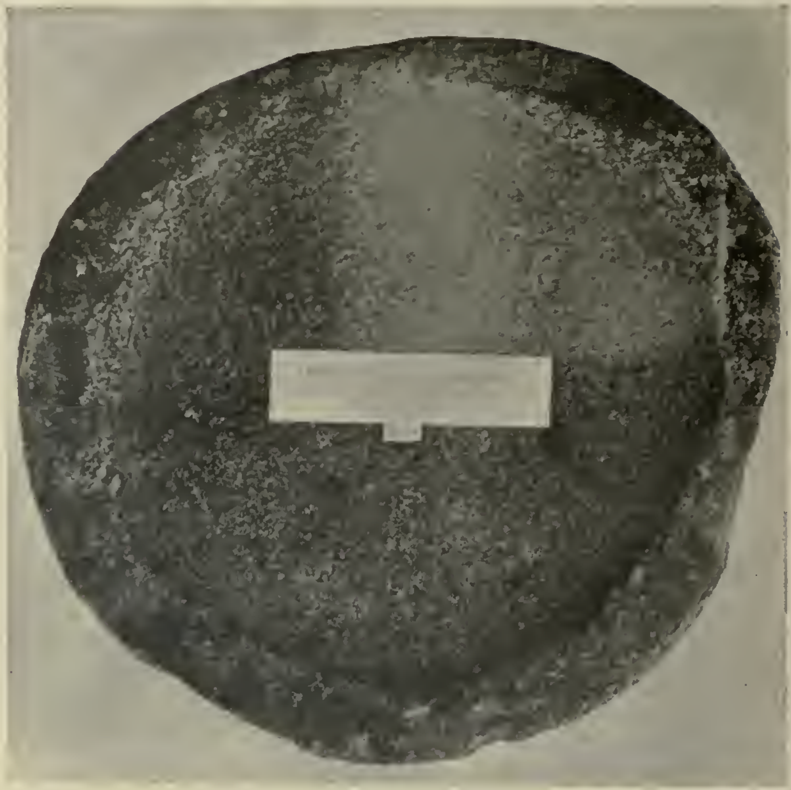


FIG. 51. HAWAIIAN STONE DISH.

broken from the bottom so that like the former it has become useless for a container and was perhaps abandoned by the last owner. It was found on Nihoa or Bird island in 1885 and was given to the Museum by Mrs. Dominis (later Queen Liliuokalani). I simply do not know what these bowls were used for, and it would be idle to conjecture without farther information. Both of these islands, the least distant Nihoa out of sight from the nearest island Kauai, were visited in former days by Hawaiians for feather gathering and fishing, and the remains of stone enclosures evidently for purposes of worship are abundant on Necker. It was apparently a Holy Island. On neither island are there permanent springs of water, and if there were they would be contaminated by the guano of the innumerable birds that frequent these rocky islets for nesting. The visitors did not reside on either island longer than necessary to collect feathers (of the tropic and frigate birds) and the landing was precarious. That there were so many stone images on Necker island is surprising for it is a narrow ridge of an ancient crater with steep

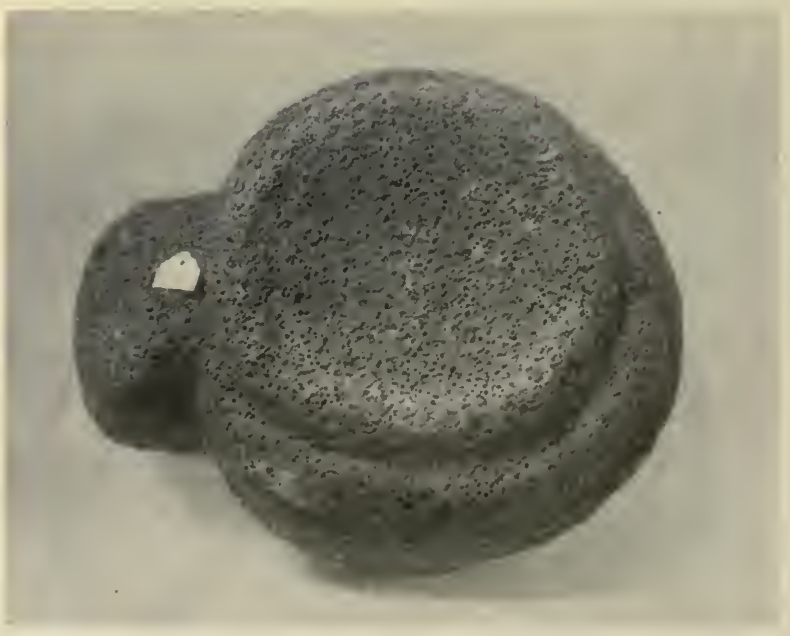


FIG. 52. STONE OFFERTORIUM FROM MOLOKAI.

sides to the sea and the stone enclosures occupy much of the level ground. In these were placed the images, and where the human visitors lived while there I do not see. On Nihoa, which is larger and more fertile (there is no vegetation on Necker island except scant grass and a few low, half-starved shrubs), there are stone enclosures, perhaps heiau, but I have not seen them, and no images have been found. Still the latter island has not been worked over so thoroughly as Necker island. As the fishermen had to go a long distance in canoes they would hardly from choice take a rare form of stone dish to contain provisions when their wooden umeke were lighter and more capacious.

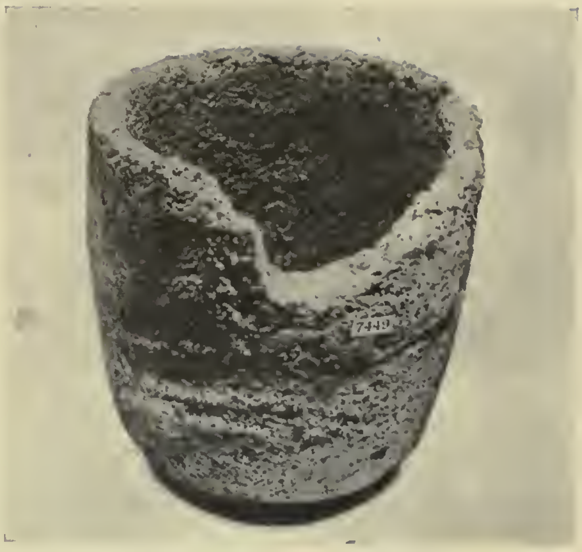


FIG. 53. STONE BOWL FROM NECKER ISLAND.

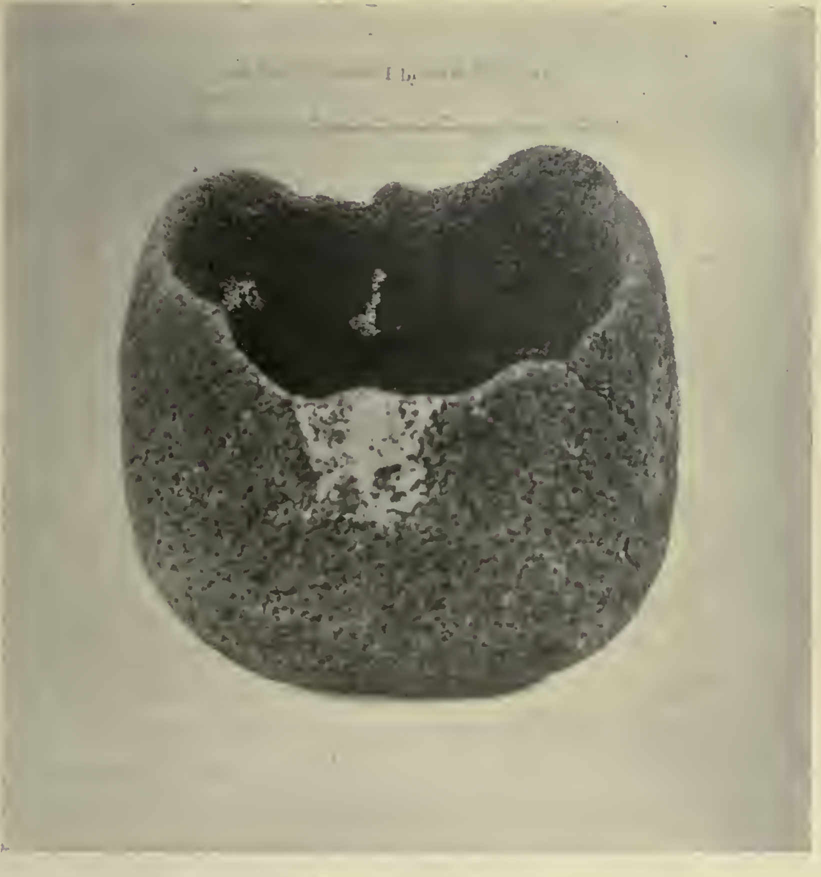


FIG. 54. STONE BOWL FROM NIHOA ISLAND.

Still another stone dish is in the Museum and from its form it might also be a dish for idol offerings, but the handle at one end and the knob at the other are not unlike some wooden dishes in use for fish, etc. The workmanship seems modern and it is quite possible that this is the poor work of some Portuguese or Japanese imitator. It is shown in Fig. 55. The extreme length is 12.5 in.

Stone Cups.—I would now call attention to the most common of Hawaiian stone vessels, the cups or saucers, which present every state of elaboration. They are found all over the group, some of them of considerable antiquity, and they were used by the fishermen to prepare bait (*palu*), by the tatuer to hold his ink, by the kapa printer to hold her dyes, and by man, woman and child for the innumerable purposes for which such a container is convenient, especially in a civilization where the differentiation of dishes has not attained the stage of modern housekeeping.

In Fig. 56 I have placed some typical forms of these cups from the most finished (No. 2974) to the roughest (No. 7760); the form with thick lips that could be used as a lamp (No. 3568) and the fanciful form (No. 3569) that might serve as cup to No. 2974 as saucer. It is seldom that these cups when dug up betray any definite marks of their former use, but sometimes the dye is still permeating the porous stone, and in others the burned oil is clearly in evidence. Although most of these cups have long since been discarded for the more convenient products of foreign make, not infrequently an old fisherman attributes greater efficacy to the ancient cup, and I have seen bait mixed carefully in a treasured relic of his predecessors.

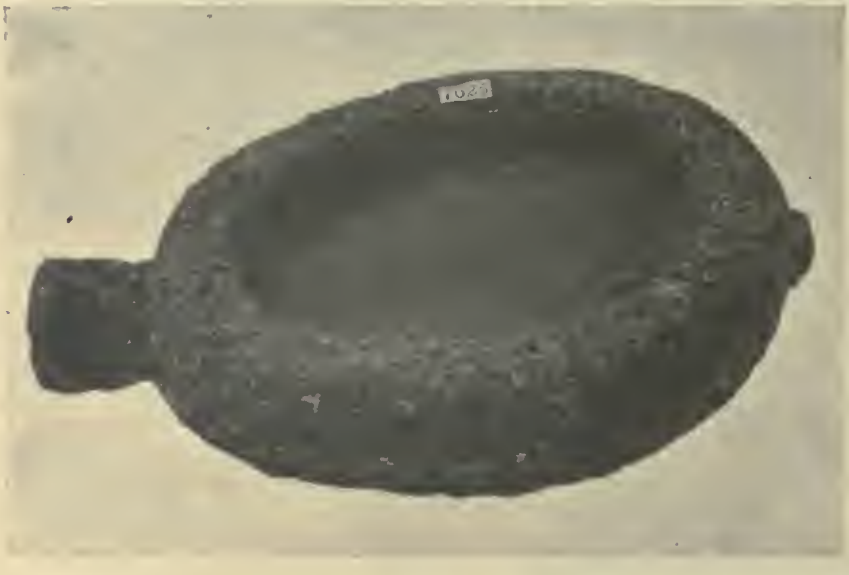


FIG. 55. HAWAIIAN STONE DISH.

Referring to Pl. XLVII. where many of these cups are shown, No. 1229 is certainly a dye cup and No. 7728 is undoubtedly a lamp, while the others may have been used for anything. The lefthand specimen in the middle row (7925) closely recalls those stone club heads from New Britain, but in this case the boring has been effected on one side only; the outer surface is that of a smooth oblate spheroid. Some are so rude as to seem mere pebbles with a slight depression pecked on a flat surface; in others the boring of the cup was done by a pestle-like pebble with sand and water.

In Fig. 57 is presented a series of well-finished cups all of one general pattern. The obverse has always a flat, well-ground, edge; the reverse is sometimes hemispherical and sometimes bell-shaped. They, like their plebeian relatives shown in Pl. XLVII. might be used in many ways, but two of the many were so peculiar as to merit a more detailed description. They in this way have place both in Worship and Amusements and in the chapters devoted to those subjects will again appear, but here we must say that in the dance (*hula*) these stone cups were used to make disgusting noises by pressing the wetted edges suddenly against some soft part of the body,—an effect especially pleasing to the Polynesian race and produced by the Samoans in the *siva* dance by placing the hand in the opposite armpit. It is probably to this curious use that we must attribute their application in the rude surgery of the Hawaiian *kahuna lapaau* as blistering cups. The other use was far more weird, and in spite of their peaceable and harmless appearance they must be placed in the category of deadly weapons.

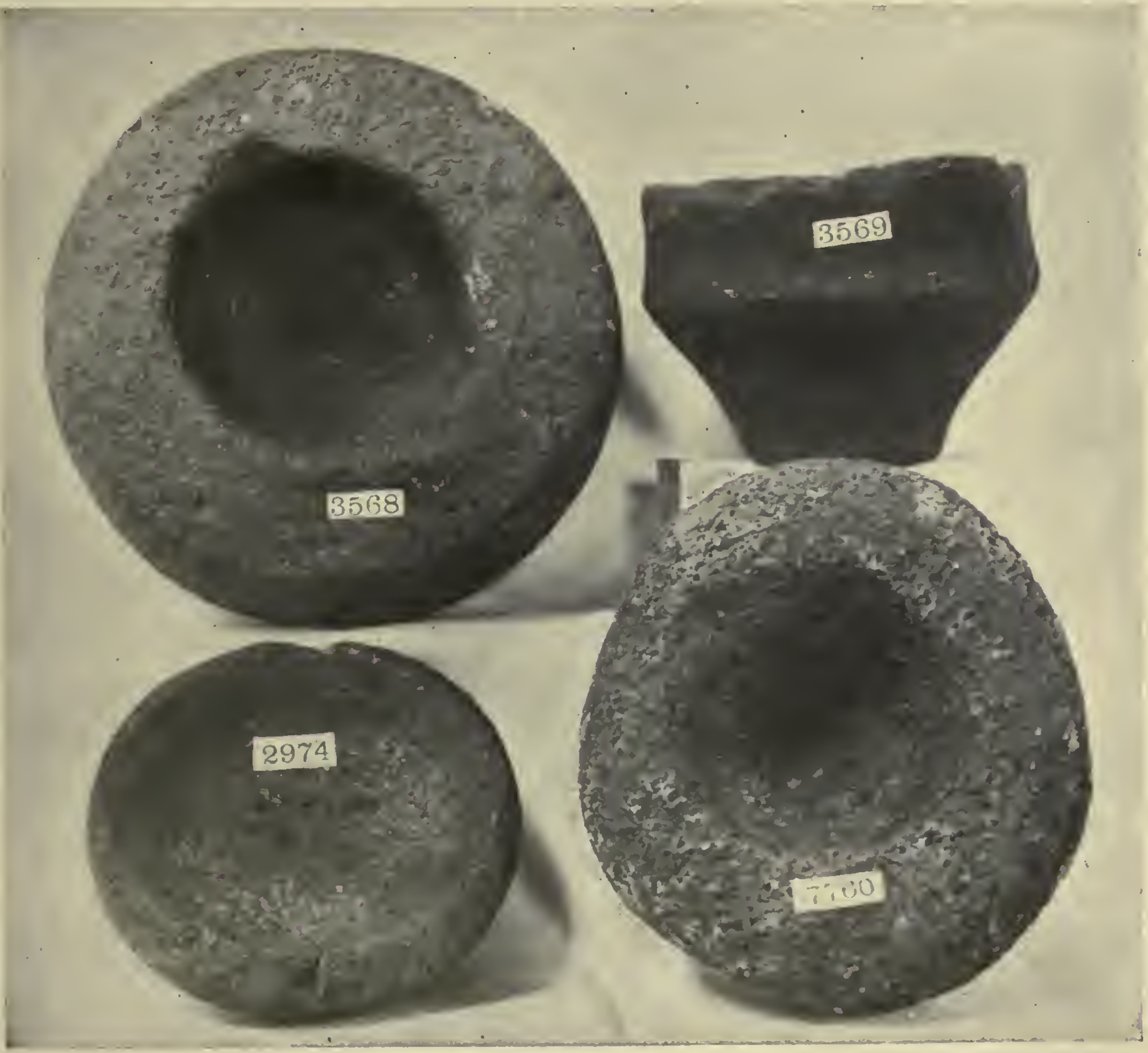


FIG. 56. HAWAIIAN STONE CUPS.

Perhaps in the quiet little row shown in Fig. 57 there is not a cup that has not caused the death of one or more Hawaiians. The strange process of "praying to death, *pule anaana*" will be fully described in a later chapter, but in one of the methods it sufficed to collect a few hairs, nail parings or some spittle of the intended victim, burn these *exuviæ* with suitable prayers in the innocent-looking cup (*kapuahi kuni anaana*) and then scatter the ashes in the water he was accustomed to drink. If this last part was impracticable, the kahuna anaana performed the previous part of the rite and then took care to have his quarry informed that his soul had been consumed. Convinced of this, the credulous victim took to his mat, wasted away and died. So fixed was the belief in this bewitching process among all classes of the Hawaiians that the utmost precautions were taken to secure from any possible enemy these rejected bodily parts even of the highest chiefs, who indeed would have the most enemies.

The material in all cases, except No. 942, which is of coral sandstone, is a brown compact lava closely allied to clinkstone, and one would incline to the belief that they all came from the same place; evidently the same pattern has been used. The more prosaic uses of these fine cups my readers may imagine for themselves. It may be of interest to some to know the size of the Hawaiian stone cups, and as the usual scale has been purposely omitted, the diameters are tabulated below. As on some of the figures the numbers do not show, the measurements are given in their order beginning with Fig. 56.

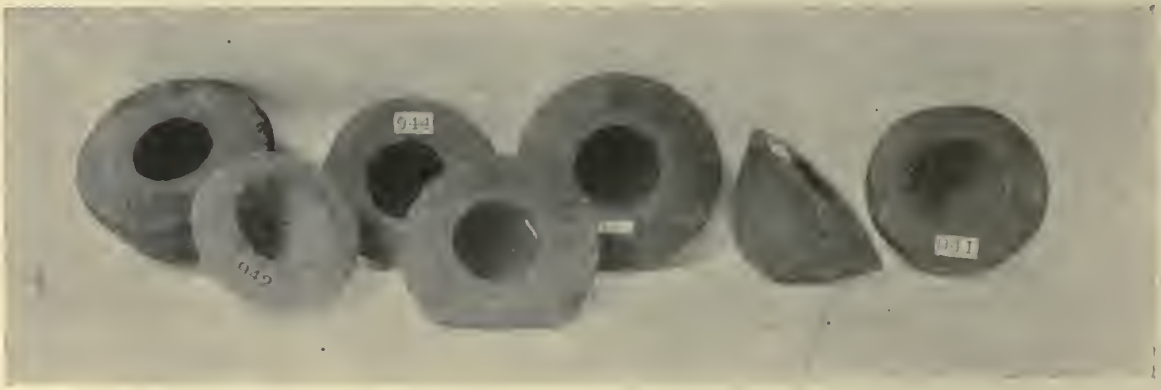


FIG. 57. KAPUAHI KUNI ANAANA.

FIGURE 56.

3568.	6.6 in.	3569.	4.6 in.	2974.	4.7 in.	7760.	5.9 in.

PLATE XLVII.

5163.	6.1 in.	5164.	3.1 in.	5161.	3.0 in.	1229.	6.1 in.	7925.	4.4 9°.
7926.	3.5 in.	7927.	3.5 in.	7928.	3.6 in.	7728.	3.4 in.	5162.	3.5.
7929.	2.9 in.	7930.	3.0 in.	7931.	2.9 in.				

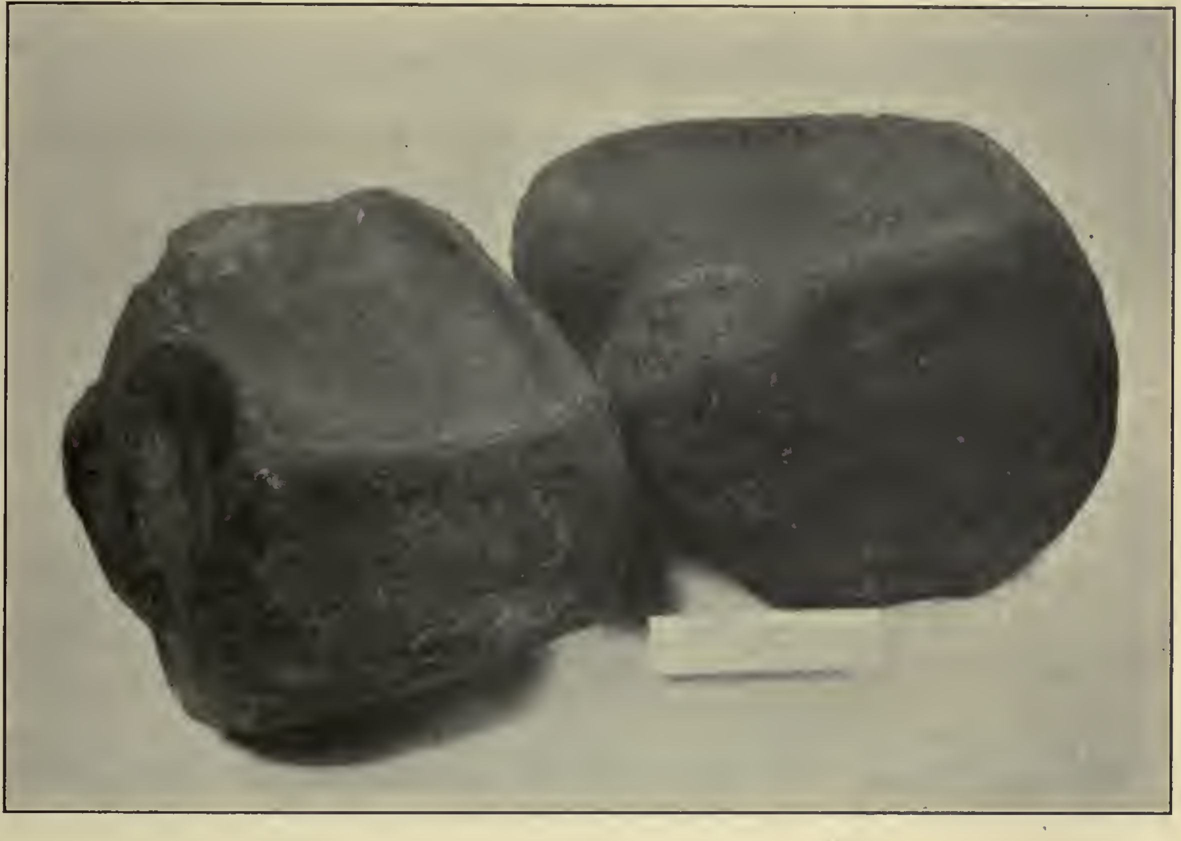
FIGURE 57.

7939.	3.8 in.	943.	3.1 in.	944.	3.4 in.	943.	3.6 in.	7580.	3.8 in.	940.	3.4 in.	941.	3.2 in.

Depth, 1.7–2.5 in.

In many of the *heiau* or *luakini* were found lavers of considerable size cut from stone but not elaborately worked. If a tolerably flat stone with a slightly concave surface could be found this concavity was deepened by patient pounding and grinding until a great, though shallow, bowl resulted of capacity sufficient for the washing of a human body: and here were washed the victims for the sacrifices. On the abandonment of the ancient system of worship in 1819 many or most of these were broken up, but a specimen remains near the heiau called Mokini in Kohala, Hawaii, large enough to contain an outstretched human body with perhaps three or four inches of water. These were certainly the largest stone dishes made by the old Hawaiians.

My attention has been called to certain stones (of which I have seen perhaps six) of roughly cubical form cut on one face into a shallow depression with a narrow rim (Fig. 58). I have been told that they were used for evaporating sea-water in the time of Umi. Although I have only seen the ordinary mud-pans used for salt-making, there is nothing improbable in that statement.* On Hawaii Messrs. Tyerman and Bennet† noticed this use of stone containers in 1821.



3212 FIG. 58. STONE SALT PANS. 3213

> "April 5. We had an opportunity of seeing how the natives collect salt, of which they furnish large quantities to ships, besides what they consume themselves. Small ring fences of masonry work are formed near to the sea, within which are placed rude stones, of all shapes having deep cavities, which may hold from one to two or three gallons of water. These being filled and evaporated from time to time, the salt is deposited, and ready for use without further trouble. In one of these basins we observed about half a gallon of fine salt.

Lamps.—The old Hawaiians had artificial lights of several sorts. There were the *lama* or torches of bambu stuffed with candlenuts or other combustible matter and the *lamaku* made by stringing the meats of roasted candlenuts on the midribs of coconut leaflets and binding together half a dozen or more of these strings with dried banana leaves. Such a torch, perhaps six inches in diameter and four feet long, gave a bright but smoky and odoriferous blaze.* In almost universal use were strings of these nuts four, six or ten meats for the slight household illumination required before reading was introduced. The kukui was tended by a child who ignited the next as the preceding nut was nearly spent by inverting the candle and when the kindling was complete knocking off the burned coal. While burning they were often rested against a stone. They gave a very intermittent and smelly light but were in use in the outlying districts as late as 1865, but since then the advent of kerosene oil has finally extinguished them.

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* Since the above was written the two specimens figured have been added to the Museum collection.

† Journal of Voyages and Travels. Boston, 1822, Vol. II., p. 19.

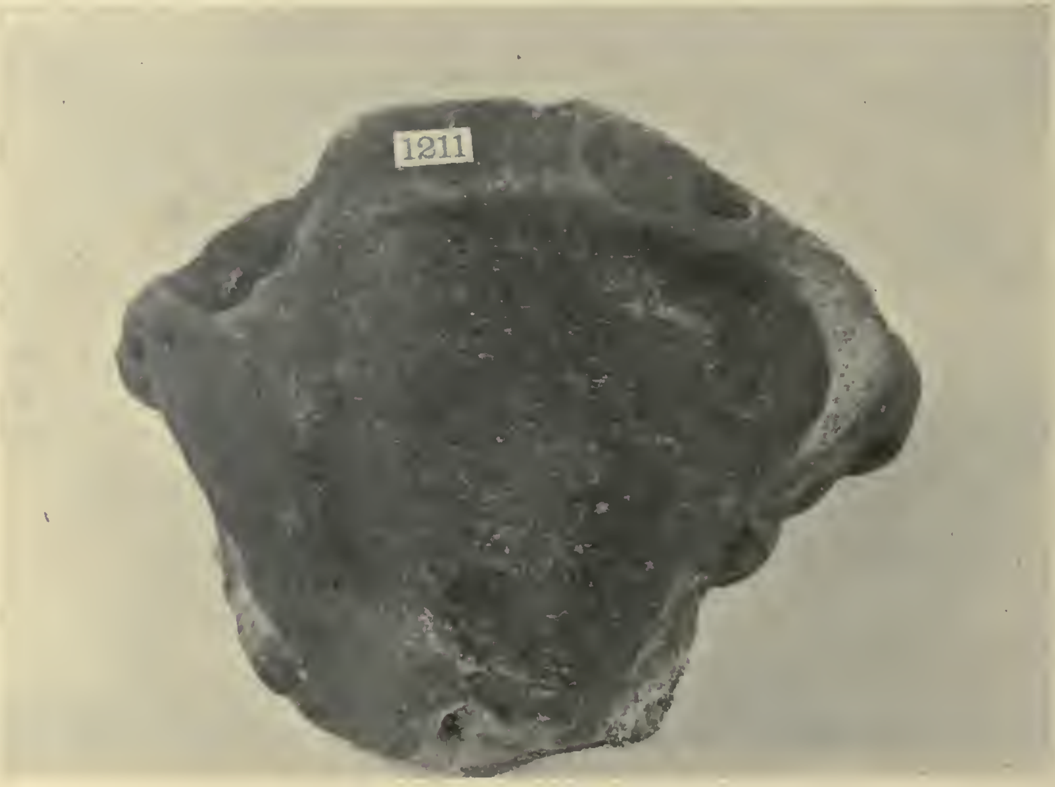

FIG. 59. LAMP FROM A LAVA BUBBLE.

The illumination we are most interested in here comes from the oil lamp which was usually made of stone, although I have seen coconut shells and even a green papaya fruit (*Carica papaya*) used to contain the oil. In the Bishop Museum is a *wooden* lamp, No. 1212. The oil was expressed from the kukui or kamani nuts in the stone mortars, and animal fat was often substituted. The wick was a strip of kapa torn from a man's *malo* or a woman's *pa'u* as there was need. One advantage of these simple bowl lamps was that an increase of light was readily obtained by adding wicks, an addition as easy as it is difficult to put a wick to a modern civilized lamp, and as many could be added as the rim of the bowl would permit.

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*I well remember the first time I saw these torches used. The American Minister Resident, Dr. James McBride, and I were travelling along the north coast of Hawaii in 1864. We had loitered behind the rest of our party and darkness came upon us as we came to the brink of the valley of Laupahoehoe. The road then led down into the valley many hundred feet below us by a narrow, steep and dangerous path, in some places overhanging the ocean, and we were glad to see the torch bearers in the valley coming to light our path, although trusting to the sure footed animals we were far down the path before the torches came, and I could smell them a long way off.

Perhaps the Hawaiian maker of lamps gave freer rein to his fancy than did workers in other stone objects, but it will be seen by Plates XLVIII.–LII. that there was some variety if little beauty in this comparatively unimportant household utensil. The simplest that I know is No. 1211, shown in Fig. 59. A bubble in the lava has been selected and the superfluous stone knocked away. It is a charmingly aesthetic treatment, wholly free from the stiffness generally seen in these lamps. We neither know who made it nor who used it. In this as in most of the Hawaiian remains there is a complete impersonality: in the few attributed to famous warriors or high chiefs there is nothing peculiar, the specimen is like dozens of other specimens and so far as that goes might have been made for Kaahumanu or Liloa, for Pele or Lono so far as the stone shows any individualism. Another peculiarity of the Hawaiian mind helps to cut off the entail as it were. Hawaiians seem ashamed of all that their ancestors made or used in the ages before the advent of white civilization and have removed so far as possible all relics of that indigenous civilization. Most of the stone articles that could not be burned or conveniently thrown into the sea were buried or hidden in caves, and only lately when there is some market value attached to these works of their predecessors are they brought to light as a source of income. Under such circumstances it would be difficult to establish any genuine genealogy.

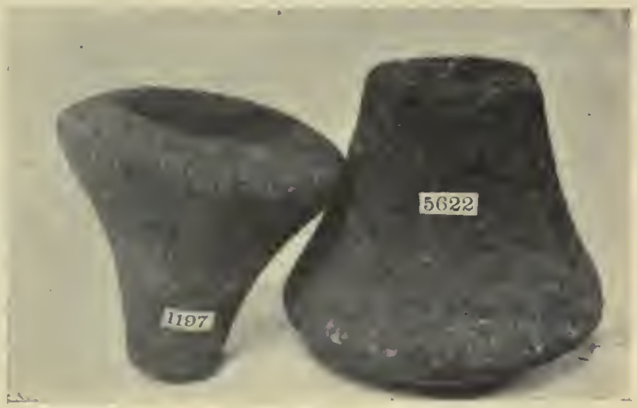

FIG. 60. LAMPS FROM BROKEN POUNDERS.

There is in some lamps an "improvement" showing some ingenuity. It appears in the small cup lamp, No. 7728, on Pl. XLVII. A little cavity sunk in the bottom of the bowl into which the last drops of oil might gravitate to feed the thirsty wick. This is almost always about a quarter of an inch deep and wide, and appears in about one-quarter of the lamps in the Museum collection.

Another example of the utilization of natural opportunities is shown in No. 1203, Pl. XLVIII., where two holes were taken and the surrounding cellular lava rudely shaped into a lamp. A third slight depression is by the side of these two holes and might easily have been deepened; a shell attached to this indicates the seaside origin of the holes for which a stone-boring echinoderm is perhaps responsible.

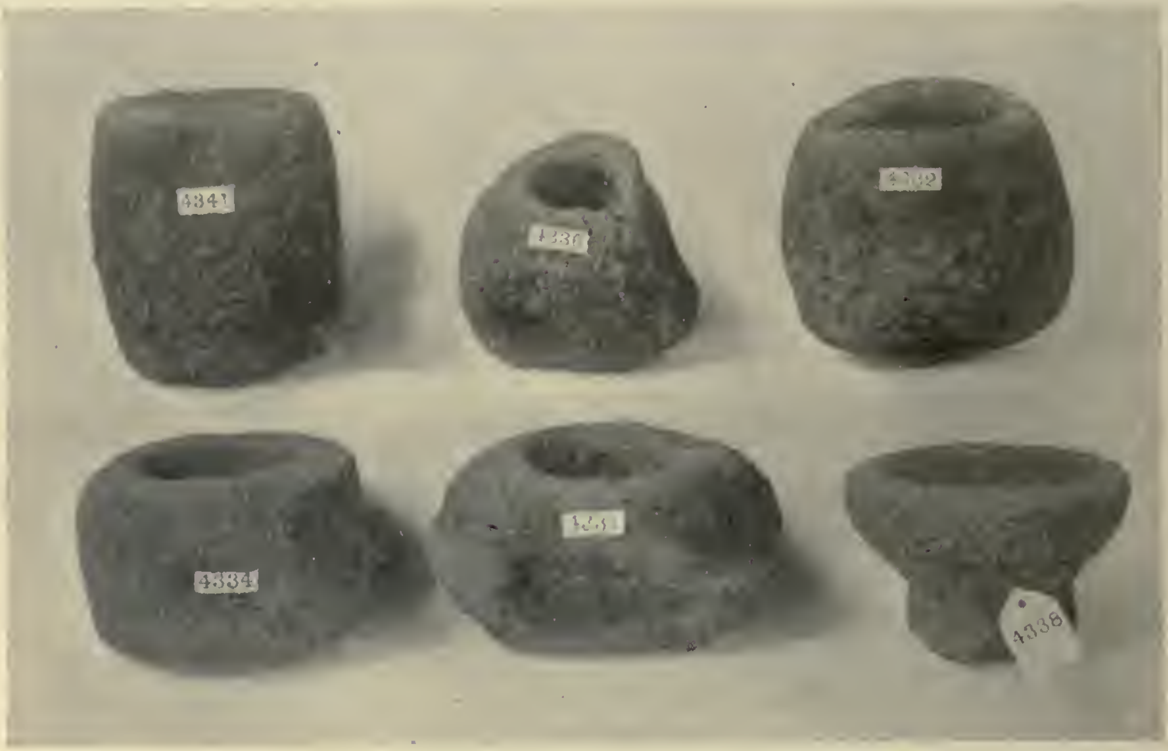

FIG. 61. RUDE FORMS OF HAWAIIAN LAMPS.

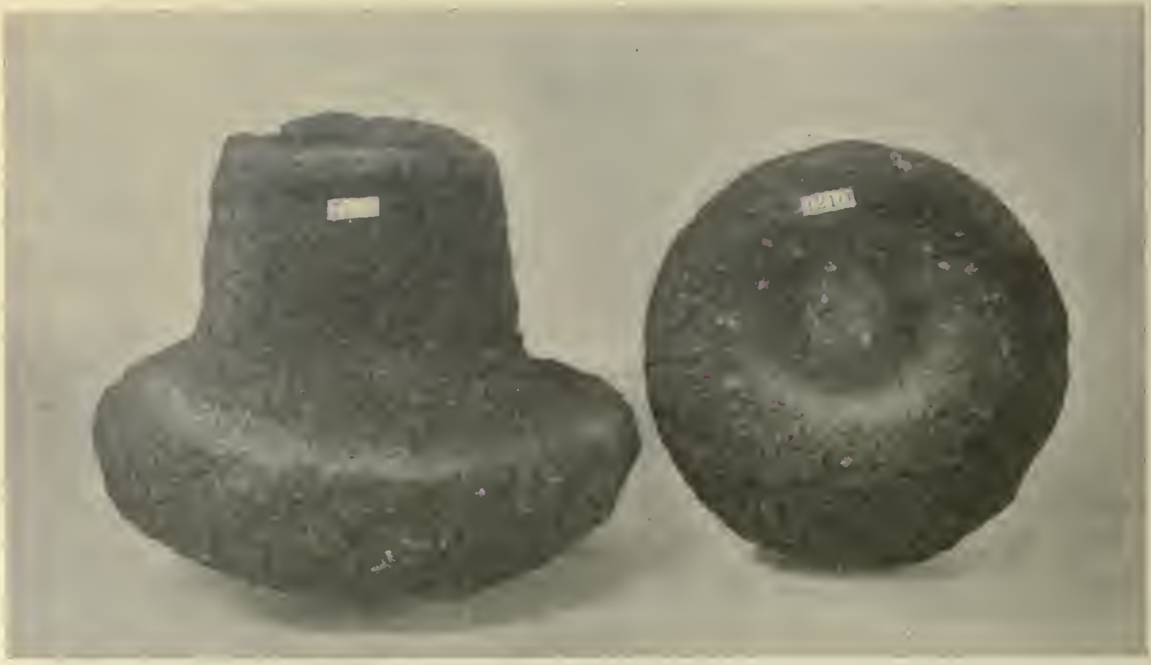

FIG. 62. STONE LAMPS FROM MOLOKAI.

Accidents often furnish a partly formed lamp as shown in Fig. 60, where two broken poi pounders have been regenerated (No. 1170) by sinking a cup into the broad end; No. 5622 by using the smaller end in the same way. In the latter the base is slightly flattened, but in the former even the original oblique break has been left. This makes a very convenient form to carry in the hand although it will not stand without support. Lamps of this class were very common, as a broken poi pounder was a part of the furniture of most families. Some very rude forms are shown in Fig. 61, and as might be supposed such are not uncommon. No. 4336 is a shapeless fragment of stone converted easily into a lamp by boring or chipping a cup; No. 4331 is a similar rough fragment, while No. 4338 although of very rough workmanship still shows design. In Fig. 62 are shown two lamps, both from Molokai, and apparently from the same quarry. The material is crystalline, of a coarse texture, and by no means common. These lamps show that particular forms were not local, for in No. 7509 there is the broad base and high cup so arranged that kukui candles could be placed against the side (compare No. 1200, Pl. L.), while No. 1210 is the simple oblate spheroid. Both are large and heavy, evidently not intended to be often moved.

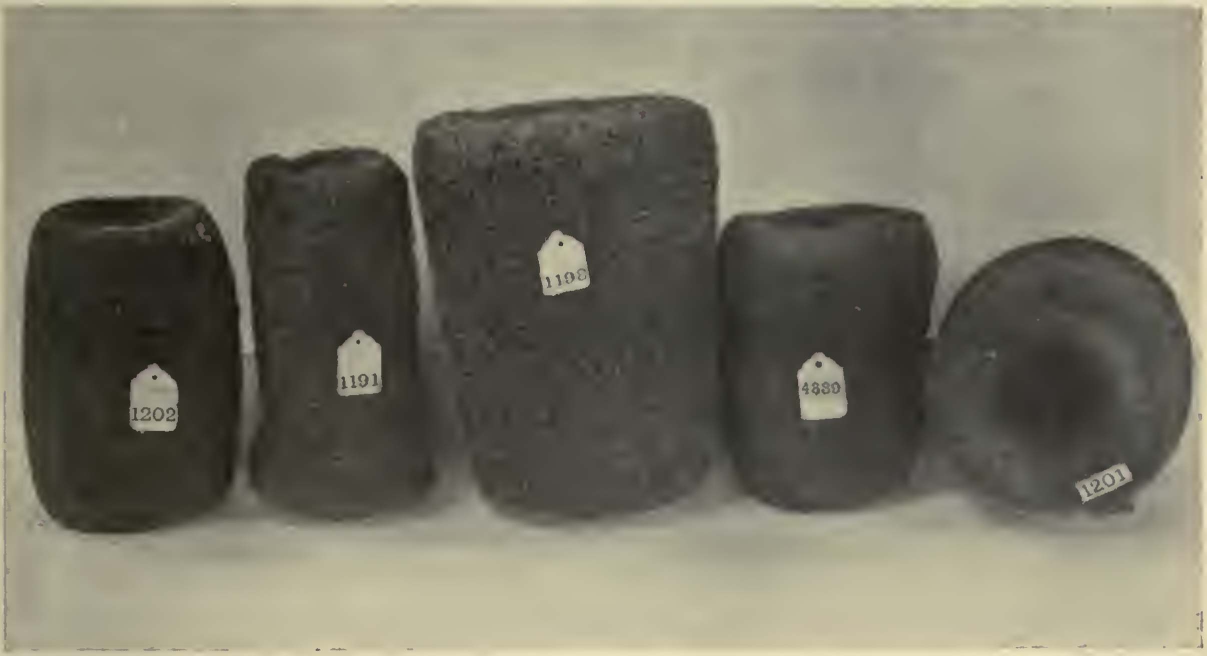

FIG. 63. CYLINDRICAL HAWAIIAN LAMPS.

In several of the Museum specimens there is a peculiarity that I have not been able to explain,—the lamp is invertible; that is, there is a poho or cup for oil at either end. Of this form are Nos. 1208 and 1190 of Pl. L., and in both the cup is of the same size and condition so that either could be used indifferently; certainly both have been used, as the oil burned into the stone testifies. In Pls. LI. and LII. are shown lamps of phallic form not uncommon among the Hawaiians. They are generally well wrought and would seem to belong to a comparatively late period. They are large and heavy, not easily transported. A common form of Hawaiian stone lamp is cylindrical, of varying height and diameter but remarkably uniform in appearance. The cup is also of nearly the same capacity in all. In height they vary from six to nine inches. No. 1202 was found at Haiku, Maui, but the provenance of the others is unknown. All are made of the same porous lava, seemingly unsuited to hold any liquid, but in use the oil soon burns to an impervious crust. The last in the group of Fig. 63 is what was called a *pohowaa* or canoe lamp used in the infrequent night voyages and also for fishing. This last use seems to be better illustrated in Fig. 64, which represents an unusual form in that it is of rectangular section with slightly rounded corners, and the bowl is much larger than usual in house lamps. The lower half tapers from a shoulder. The bowl was filled with fat, and with a wick of twisted rush or kapa, bright but flaring light was obtained. The lamp could be placed in the hole in the thwart intended for the mast, or in a similar hole in a board projecting over the gunwale. Night fishing was a favorite sport among the Hawaiians, although the lama or torch was generally used instead of a fixed lamp. I do not know much about the stone lamps of the other Polynesians except the Tahitians, and from that group I have seen only the finely designed and wrought lamps in the British Museum, and in that at Cambridge, England, the latter brought home by Tyerman and Bennet, if my memory serves. These are called "Sorcery Lamps", and may be correctly designated, but no more definite information has come to me of the way in which they were used. The name suggests a use like that of the Hawaiian kapuahi kuni anaana of Fig. 57. No part of the Pacific has retained less of the olden time than the Society islands. The conversion from ancient

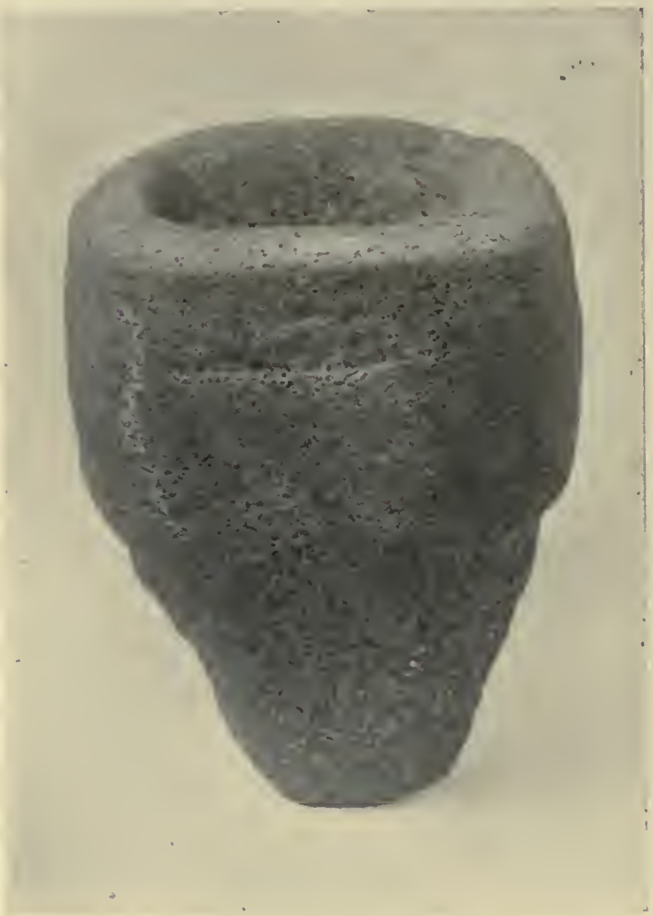

FIG. 64. FISHING LAMP.

idolatry was so sudden and complete that everything appertaining to the abandoned cult was destroyed or hidden. The new converts brought forth their treasures as did the hypnotised Florentines at the bidding of Savonarola and consigned them to the flames if thereby they might ransom themselves from Purgatory. Far more of ancient Tahitian implements are in foreign museums than on the group. The British Museum was especially favored since it has the articles brought home by that early missionary and careful observer Reverend William Ellis. Fig. 65 shows one of the several sorcery lamps in the British Museum and it will at once be noticed that the design and workmanship far surpasses anything we have on the Hawaiian group. The perforated basement seems peculiar to this form of lamp. The cup for oil is exceedingly large, suggesting that it was used like the *kapuahi kuni ana*, to burn other material than merely light-producing oil. The arch over the bowl could not conveniently be used as a handle, for the smoke of combustion made it constantly sooty, and its size was also in the way. Perhaps it was a rest for kukui nut candles. Something seems to have been broken from the top of the arch, possibly a consecrated figure. That the general size of the Hawaiian stone lamps may be understood, I give here the height and diameter with any explanation seemingly required:

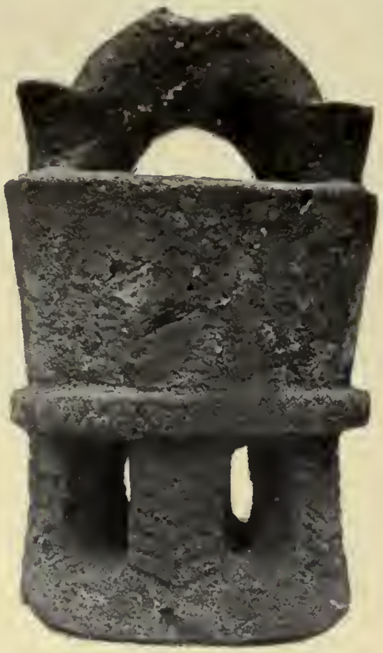

FIG. 65. TAHITIAN SORCERY LAMP.

FIGURE 59.

1211. A bubble of surface lava, 3.5 in., 6.5 in.

FIGURE 60.

1197. End of a broken poi pounder; the larger end hollowed out; 4.5 in.

5622. Broken poi pounder; hollowed at the smaller end; 4.7 in., 5.2 in.

FIGURE 61.

4341. 4.7 in., 4.4 in.

4336. A seaworn block; two natural cups, the deeper (2.5 in.) used; 4 in.

4332. Incrusted with burned oil; 4.6 in.

4334. Neatly rounded; 3 in., 4.5 in.

4331. Has a deep cup; 3.2 in.

4338. Olivine lava; 3 in., 4.4 in.

FIGURE 62.

7509. Large and heavy; lava full of felspathic crystals; Molokai; 8.2 in., 10.5 in.

1210. Of the same stone and from the same locality as last; 5.7 in., 9 in.

FIGURE 63.

1202. Haiku, Maui; 6.7 in., 4.4 in.

1191. Deep cup with cistern; 7.5 in., 3.5 in. (top).

1193. Cylindrical, of coarse lava; 8 in., 6 in.

4339. Cistern in cup; 6 in., 4.5 in.

1201. Cup 2.5 in. deep; Pohowaa; 6.2 in., 5.2 in.

FIGURE 64.

7959. Boat lamp for fishing; cup 3.7 in. deep; 8.7 in., 6.5 in.

PLATE XLVIII.

7759. Deep cup with cistern; 6 in.
1203. Three natural cups, two of them used; 5.5 in., 8 in.
7758. Flat base, very large cup; 4.2 in., 5.9 in.
1206. Spherical, broken on the lip; 6.5 in., 6 in.
4330. Cistern in cup; 3.7 in., 5.2 in.

PLATE XLIX.

1205. Square block with rounded corners; 4.5 in.
1194. Upper portion pentagonal; 5.2 in.
7691. Cistern in cup; 3.5 in., 5.5 in. [Wrong number on plate.]
1226. Perhaps also used as a mortar; 4.7 in., 7.2 in.
1207. Unwrought, small cup; 5.7 in.
1228. Cistern in rather shallow cup; 2.2 in., 6.7 in.

PLATE L.

1208. Cup at each end, the upper one larger; 5.7 in.
1232. Found in 1880 at Kulaokahua, Oahu; deep cup; 6.5 in., 8.2 in.
1209. Large cup without cistern; 6 in., 6.7 in.
1200. Cistern in cup; Kohala, Hawaii; 5 in., 3.7 in. (top) 6.6 in.
4333. Round as if turned; striated stone; 5.5 in., 6.5 in.
1190. Cups at both ends with cisterns; 5.5 in.

PLATE LI.

1182. Coarse lava, phallic; 10 in., 7.7–3.7–4.6 in.
7690. Very well formed, cup 2 in. deep; 8.1 in., 4.8 in. (head).
1183. Cup large, grooved for candles; Niihau; sandstone; phallic; 11.5 in.
1189. Base rectangular (3.7 × 3.2 in.); 7 in., 4.8 in. (head).
1184. Phallic; 7.2 in., 7.7 in. (base).

PLATE LII.

1185. Nuuanu, Oahu; greenish lava, shallow cup for nuts; 8 in.
4340. With a curious rim; 7.5 in., 6.2 in. (rim).
4337. Broad top, narrow base; 4 in.
1192. Cistern in cup; 5.2 in.
1187. Cup 2 in. deep; 4.2 in., 3.7 in.
1186. Small cup and four feet; Waimea, Hawaii; 6.2 in., 4.2 in. (head).
1188. Smooth finish, phallic; 6 in., 4.7 in. (head).

Stone Mirrors.—The *Kilo pohaku* of the Hawaiians were most ingenious. Some native Narcissus admiring his face in some placid pool may have caught the suggestion and, wiser than the beloved of Echo, instead of pining away for love of the intangible image, devised a means of recalling this image at pleasure. Whoever may have been the lucky inventor, the results as we have them today are certain well-ground circular disks, less than half an inch thick, and of diameter varying as shown in Fig. 66. These were not highly polished and do not in the least reflect when in a dry condition, so their properties would be concealed from a casual observer, but placed in a shallow calabash of water the dark background of the stone gives back a sufficiently clear reflection. I have never seen any of these mirrors of other than circular form. They rapidly disappeared from use with the advent of European glass mirrors* and their use was soon forgotten. In the native kahuna lapaau practice they are occasionally used as a cooling application to furunculi or other ulcerous sores, and for this use holes are often bored near the edge through which a cord for suspension could be passed.

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*There is in the Bishop Museum a strip of "silvered" glass given by Vancouver to Kamehameha, to which has been fitted a neat frame of native wood: similar mirrors, but of smaller size, were attached to handkerchiefs by the Hawaiian women, much like the fashion of attaching small mirrors to folding fans, once in vogue among white ladies.

I know of no other sub-civilized people who have adopted this ingenious conception. Specimens are no longer common. The stone is a sort of basanite, quite as compact as the phonolite used for adzes, and it is of a uniformly dark color in all the examples noted. It is supposed to come from the uplands of Maunakea on Hawaii.

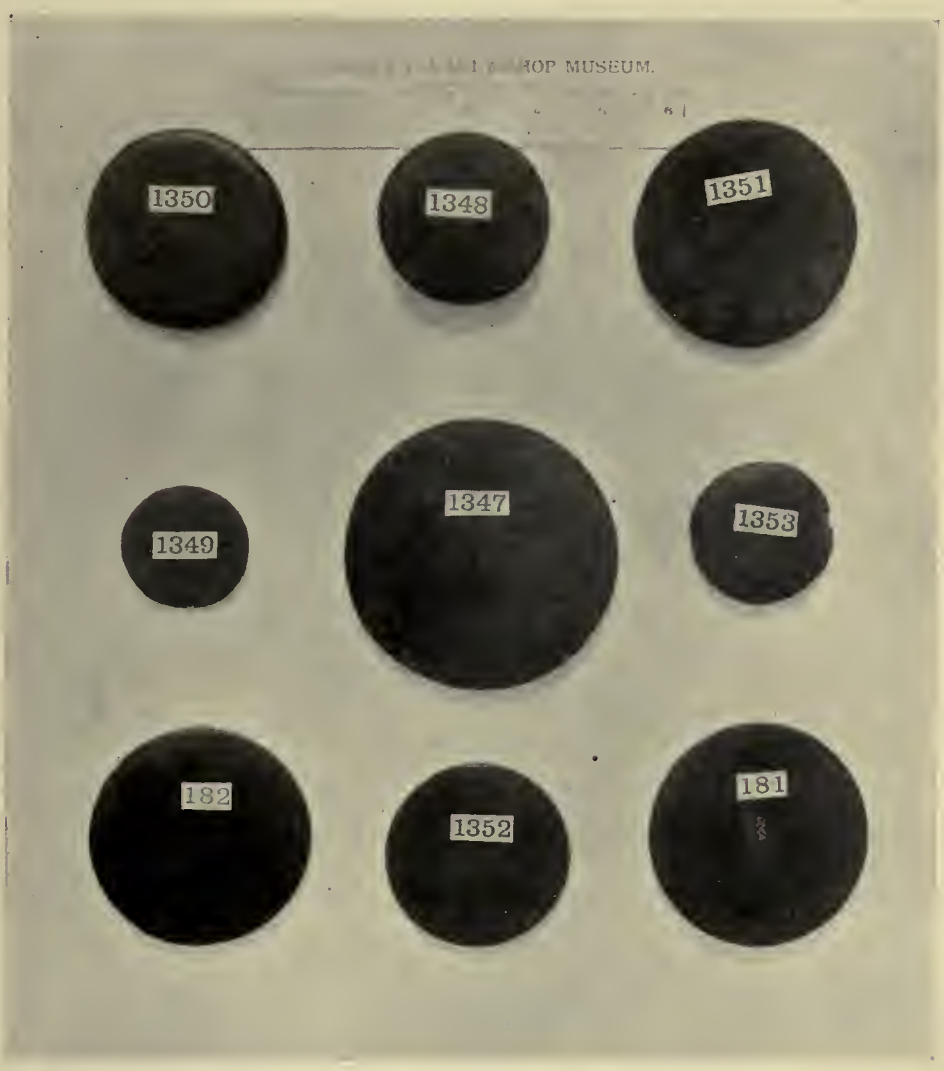

FIG. 66. HAWAIIAN STONE MIRRORS.

Ulumaika.—Made much in the same way but for a very different purpose are the Ulumaika stones. The game *maika* was played with stone disks (or sometimes balls), called on Hawaii and Kauai *ulu*, while on the intervening islands of the group, Maui and Oahu, *olohu* was a more common designation. A full description of the game, which was a favorite one from Hawaii to Niihau, will come properly into the chapter on Amusements, but here it may be briefly stated that a smooth alley or *kahua* fifty or sixty yards long was built as for bowls, and on this was played three forms of the game. The first was a competitive trial of strength in settling how far the stone could be thrown, or rather bowled, and the old *mele* often tell of fabulous distances covered by the ancient Hawaiian heroes. The second required more skill than strength to drive the ulumaika between two upright sticks a few inches apart near the end of the

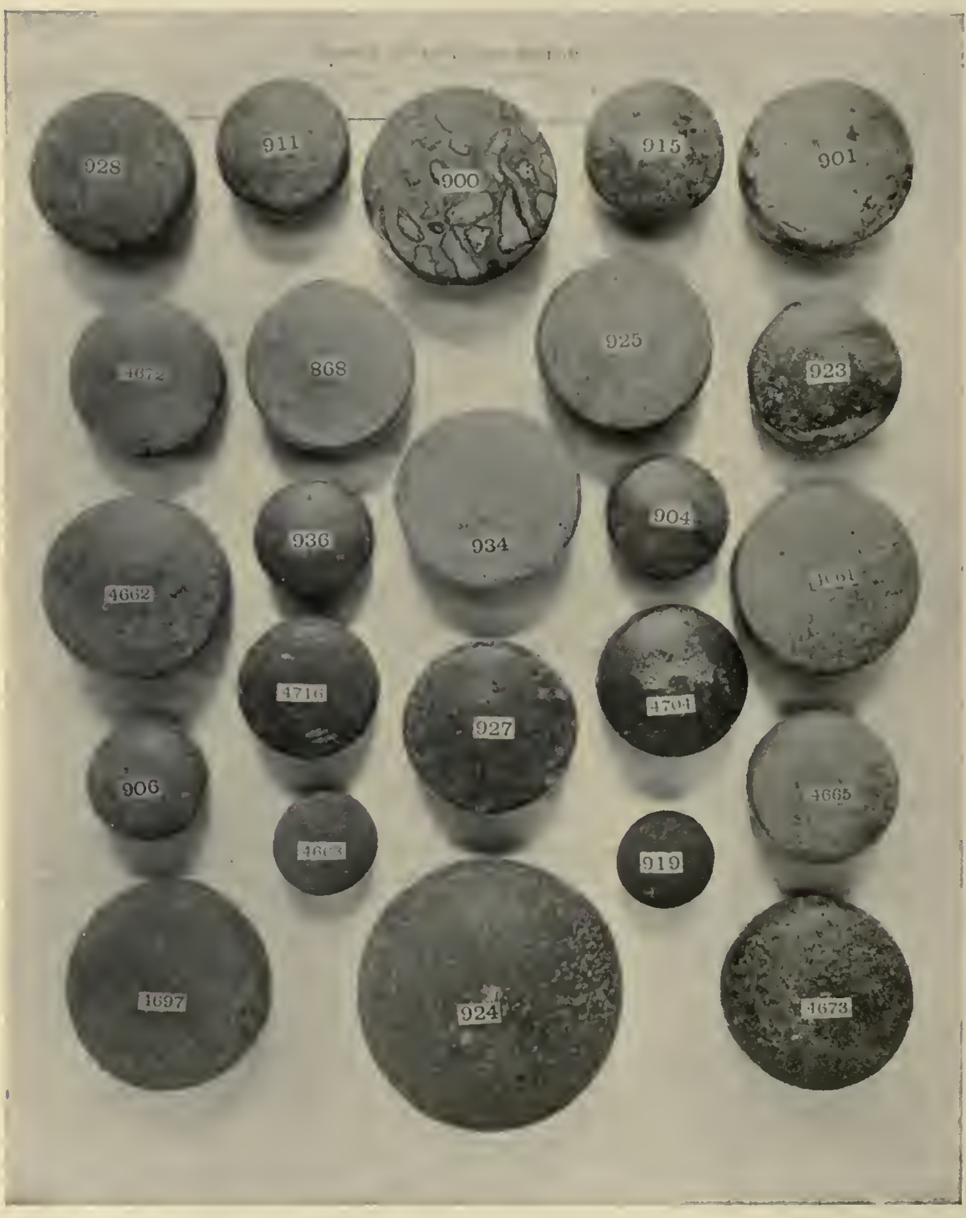

FIG. 67. HAWAIIAN MAIKA STONES.

kahua, or thirty to forty yards from the bowler.* The third was rather a trial of the ulu than of the players, as the stones were rolled against each other and the toughest won the game for its owner. There is a famous kahua near Kalae on Molokai, where I have seen hundreds of ulu so broken that the fragments were not worth carrying off. The players trained carefully and became very strong and skilful. Practice began in early youth, and children used rough and unpolished stones for their play. Various kinds of stone were used as we have seen was the case with the squid-hook sinkers, but a heavy compact coral rock seems to have been the favorite; it was sometimes artificially colored, and indeed it was generally stained by the coconut, kukui or kamani oil with which the choicest ulu were frequently anointed. Wood was sometimes used instead of stone, as in No. 902 in the Bishop Museum which weighs 11.2 oz. and belonged to the Princess Keelikolani.

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* Narrative of a Tour through Hawaii by William Ellis, p. 187. Second edition. London, 1827.

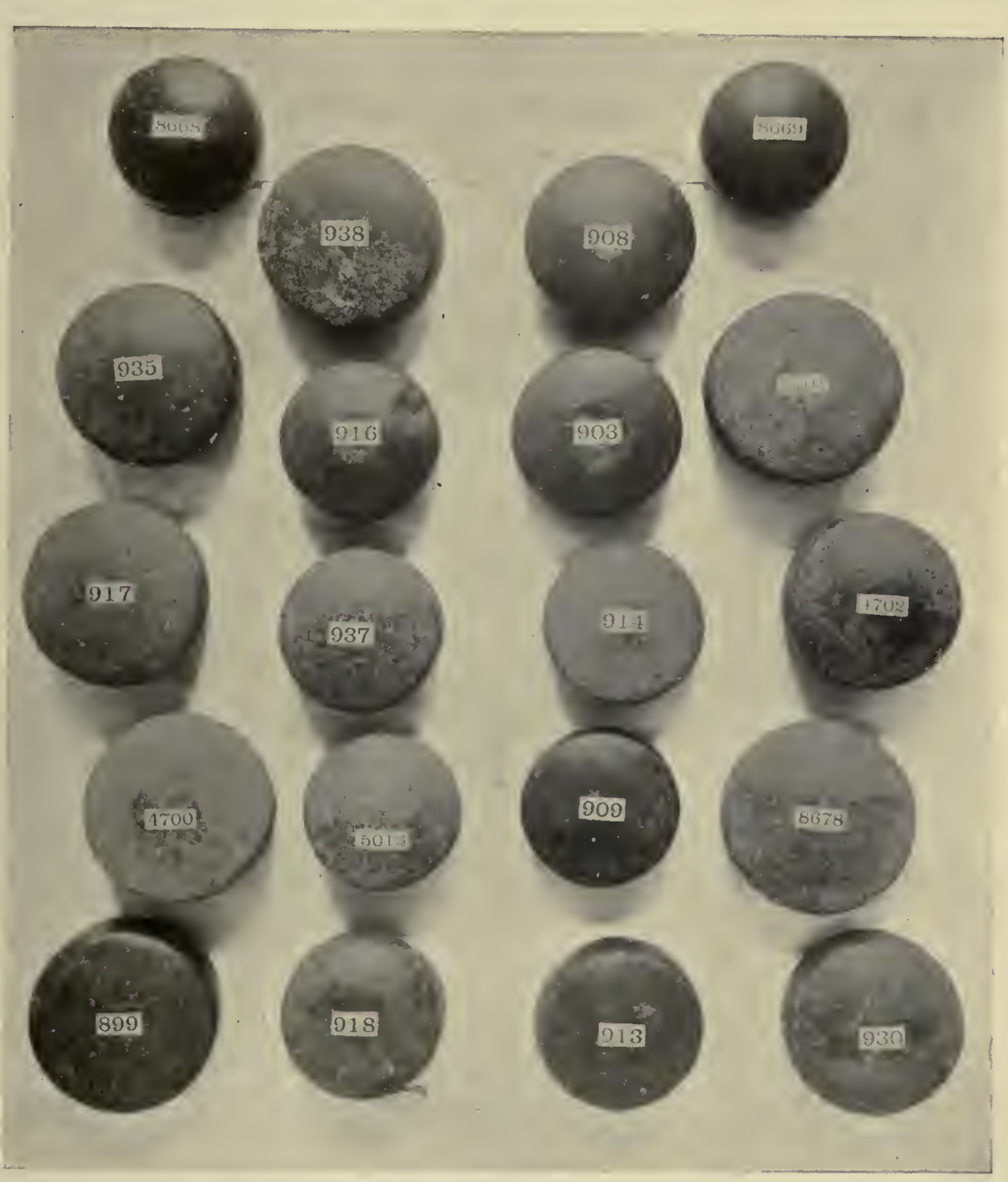

FIG. 68. HAWAIIAN MAIKA STONES.

While sometimes spherical, as has been noted in the description of stone balls, ulu were mostly thin cylinders with slightly convex sides: the edges were often rounded, Of those in the Bishop Museum the largest is five inches in diameter and three inches thick; it weighs forty-four ounces; the smallest is one and seven-eighths inches in diameter and weighs three and one-half ounces. That the thickness of the disk bears no definite relation to the diameter may be seen in Fig. 69. Some of the best ulu are shown in Figs. 67 and 68, and the following table will give the size and weight:—

Number.	Diameter.	Thickness.	Weight.	Material.
FIGURE 67.— 928.	3.1 in.	1.6 in.	14.7 oz.	Coral rock.
911.	2.6	1.6	9.5	Coral rock.
900.	3.7	2	22.5	Brown and yellow breccia, Hawaii.
915.	2,7	1.8	11.7	Coral rock.
901.	3.2	2.2	18.5	Coral rock, highly polished.
4672.	3	1.5	11.5	Coral rock.
898.	3.3	1.6	15	Coral rock, sharp edges.
925.	3.4	1.8	18	Coral rock, sharp edges.
923.	3	1.8	12.2	Breccia, chipped.
936.	2.3	1.5	7	Coral, stained.
934.	3.5	1.5	20	Coral; Kailua, Hawaii.
904.	2.4	1.5	7	Yellow breccia, chipped.
4662.	3.6	2.1	23	Compact coral rock.
4716.	2.8	1.8	11.5	Basalt.
927.	3.4	1.7	11.2	Yellow breccia, chipped.
4704.	3	1.8	11.5	Lava, much defaced.
4661.	3.6	1.9	22	Coral rock, beautifully polished.
906.	2.4	1.7	8	Coral rock, very convex.
4663.	2.1	1.4	3.5	Grey lava, one face chipped off.
919.	1.9	1.3	4	Rough lava; used by children.
4665.	3	1.8	14	Coral, well polished; Liliuokalani.
4697.	3.9	2.2	31	Coral, chipped.
924.	5	3.1	52	Lava, with cells filled; very convex.
4673.	3.7	1.9	24	Coral rock.
FIGURE 68.—8668.	2.7	1.7	8	Red stone with brown veins.
938.	3.3	1.8	19	Lava.
908.	3	1.8	14	Lava, stained red; North Kona, Hawaii.
8669.	2.7	1.6	9	Light brown compact stone.
935.	3.2	1.8	16.2	Lava, stained red; well polished.
916.	2.9	1.6	13.2	Lava, stained red.
903.	3.1	1.6	16	Red lava (?); Hilo, Hawaii.
4701.	3.4	2	23	Sandstone (?).
917.	3.2	1.8	14.7	Grey lava, unsymmetrical.
937.	2.9	1.7	11.7	Lava.
914.	2.8	1.5	12	Grey lava, not polished.
4702.	3.1	1.9	12.2	Black lava.
4700.	3.4	2	16.5	Material resembling blue clay.
5013.	3	2	12	Coral rock; belonged to Mopua.
909.	2.9	1.4	11.7	Black lava.
8678.	3.4	1.8	16	Lava; F. A. Hosmer.
899.	3.4	1.7	14.5	Grey lava.
918.	3	1.8	13	Compact lava.
913.	3.1	1.7	11.2	Grey lava.
930.	3.2	1.8	18.2	Compact lava.
Average:	3.09	1.77	17.15	

These forty-four ulu have been selected from the large number in the Bishop Museum (see Fig. 69 for others) solely on account of their fine finish, and they will probably fairly represent the forms used by the best players. I am puzzled by the unsymmetrical specimen No. 917, for it is difficult, if not impossible to roll it straight. Did the ancient Hawaiians have "trick bowls"?

Not only has this fine game faded from the memory of the fading Hawaiians, but the stones have become curiosities to them. I once asked an intelligent Hawaiian the name of these stones, and his reply was, "*Aole ike wau; pohakn kapili waa paha.*" "I do not know; perhaps a stone to pound a canoe." Indeed they have often been used as hammers, and many have dents on the edge or sides. Another use for the rough, poorly finished ulumaika I have noticed several times. In the sand burials at Koloa, Kauai, and near Leahi on Oahu, they were placed under the chin of the corpse, which was arranged in a sitting posture with the knees against the breast. Curiously enough two of the three instances noted were female skeletons; the other was not recorded; but as women did not play maika these were not cases of prized possessions buried with the dead,—rather a pillow for the tongue in the long sleep.

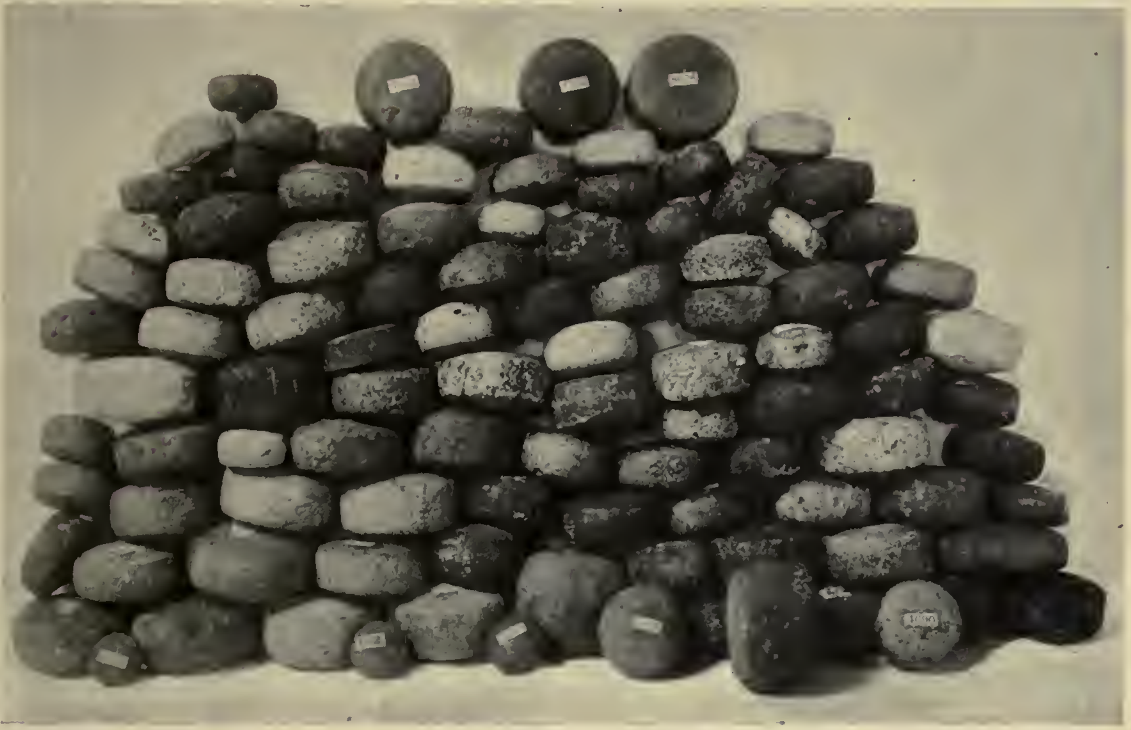

FIG. 69. PILE OF MAIKA STONES.

Exactly how the ulumaika were made I cannot say, for the methods told to me (the process ceased long before I came to the Islands) vary considerably, and I could not regard my informants as very *akamai* or skilful in the matter. From the large collection at my disposal I have arranged the stages somewhat as follows, although the order in any individual case might of course be varied: stone roughly rounded; sides ground flat; accurately rounded; sides made convex by grinding between grooved stones which were held so that the grooves were at an acute angle with each other; polishing the stone. Specimens of all these stages are in hand; some are given in the figures, for the last two are sometimes omitted and we have simply a flat circular disk without polish.

Ring Cutting.—The native Hawaiian bambu is of small diameter and so could not be used as the larger species are, so ingeniously, by the islanders of the western Pacific to cut disks and rings from stone or shell, but the process has produced so many specimens in all large ethnological collections that it may fairly be described here. If the Hawaiians could have had it the making of ulumaika would have been greatly simplified. I have selected for illustration a large heavy ring of limestone used as a *cindalo* or god on one of the Solomon group, and it will be seen in Fig. 70 that the central hole is cleanly bored. No. 1883 is 9.6 inches in diameter and it was probably rounded in the Hawaiian way between stones, but the hole which measures, as seen by the scale, only 3.2 inches was bored with the bambu drill. The two lower rings in the same figure are of a much harder material, the shell of the huge bivalve *Tridacna gigas*, common through Micronesia and the Bismarck archipelago. I have seen good steel drills broken in the attempt to pierce this shell, and yet it will be seen that the bambu has done its work with success and neatness. The rings, which come from northeastern New Guinea, are used as bangles or wristlets and are made by patiently twisting a loaded bambu of suitable diameter and armed with silicious sand and water. A fragment of the shell is bound around with slips of rattan, as shown in Fig. 71, and fitted snugly into a cavity of a block of light suberose wood, probably a species of *Erythrina*. With the feet resting on this block the workman twists right and left the ever shortening bambu, which is four or five feet long at the start and usually has a stone of one or two pounds weight attached to one side. Water and sand joined to the silica of the bambu will in time work through the hard shell. In a specimen of the bambu in the Bishop Museum the cutting edge is roughly serrated and thin. When the central hole was bored a larger bambu was used to complete the ring.

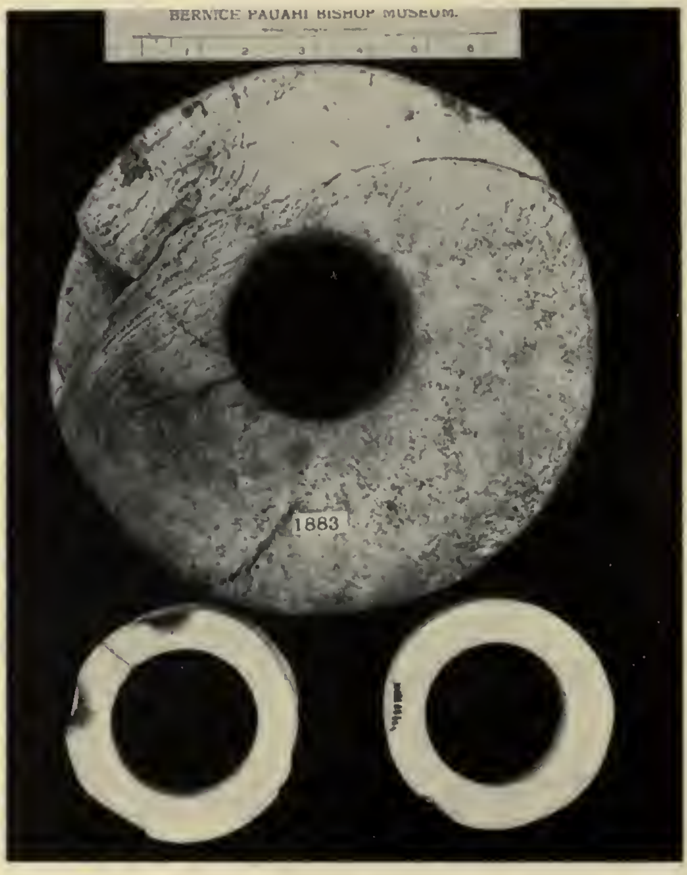

FIG. 70. RINGS OF LIMESTONE AND SHELL.

For boring small holes in stone, shell, or bone, the old Hawaiian used fragments of lava made fast to the spindle of the universally known "pump drill", and in most cases the hole was not bored directly through but countersunk, as it were, from both sides until the conical holes met in the middle of the object to be perforated. In this way were bored the holes in dog teeth for attaching them to the net for anklets to be worn in the hula. One pair of these hula anklets in the Bishop Museum has nineteen hundred holes, each drilled from both sides!

Fishing Stones.—A peculiar method of fishing in vogue among the old Hawaiians consisted in suspending in the water club-shaped pieces of wood smeared with some bait (*palu*) supposed to be attractive to the fish, and then hooking or scooping the assembled prey. Many of these *laau melomelo* are in the Bishop Museum, and many of the formulæ for bait used to render the log attractive have been published in an early catalogue of this Museum.* Stone was sometimes substituted for wood, although rarely, and the only two that I have seen are shown in Fig. 72 (Nos. 7453 and 7452). They are well made, doubtless for some person of importance, and have been carefully kept. The longer one measures 9.5 inches and is of very graceful outline. In shape they resemble magnified "amulets" or "plummets" so common on the American continent. Most of the fish caught by means of these *pohaku melomelo* were small shore fish and the process will be described more fully in the chapter on Fisheries.†

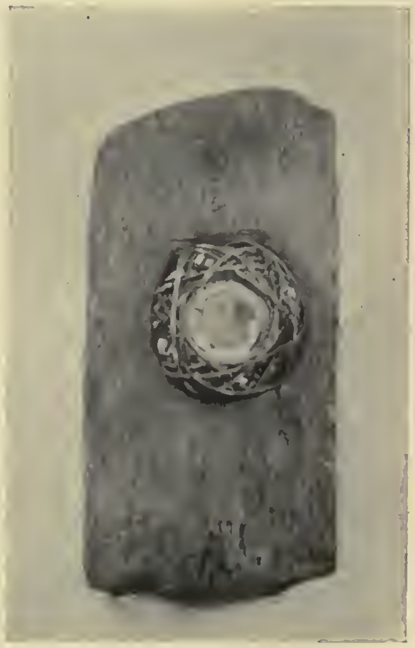

FIG. 71. METHOD OF BORING SHELL RINGS.

Papamu for Konane.—The game of *konane*, a favorite one among the upper classes of old Hawaii, was usually played on a wooden board (*papamu*) marked with spots arranged either in files or quincuncially and of indefinite number. In some cases stone took the place of wood, as in a fine specimen in the Bishop Museum (No. 5313). Here a large flat stone 16×24 inches is dotted with depressions (about 120) in files, but I have seen a much larger series of these pits upon the flat lava slabs *in situ* near Kailua, Hawaii. The "men" used in playing were beach-worn pebbles of black lava and white coral.

Axes and Adzes.—If this important class of stone implements has been left until now it was not for insufficient appreciation, nor poverty of material, except in the first mentioned tool, where No. 4603 (Fig. 73) is not only the single specimen of its kind in the Bishop Museum, but the only one I have seen. It is a great stone wedge 7.5 inches long and 2.5 inches on the blade. It is of hard and durable clinkstone weighing 2 lbs. 13 oz. The angle of the wedge is about 65°. When used as an axe it was doubtless bound to a handle, although the very blunt end would seem to render the attachment difficult. Except for riving logs I do not know what work such an axe could do that might not better be done with the more common adzes. Another more common form of axe is shown on Plate LVII., No. 3141.

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*A Preliminary Catalogue of the Bernice Pauahi Bishop Museum of Polynesian Ethnology and Natural History, Pt. II., p. 95. Honolulu, 1892.

†The Indians of Vancouver used sinkstones of the size of a goose egg and shaped like those described in the text, to twirl the bait. Mem. Anthrop. Soc. London. III., p. 261.

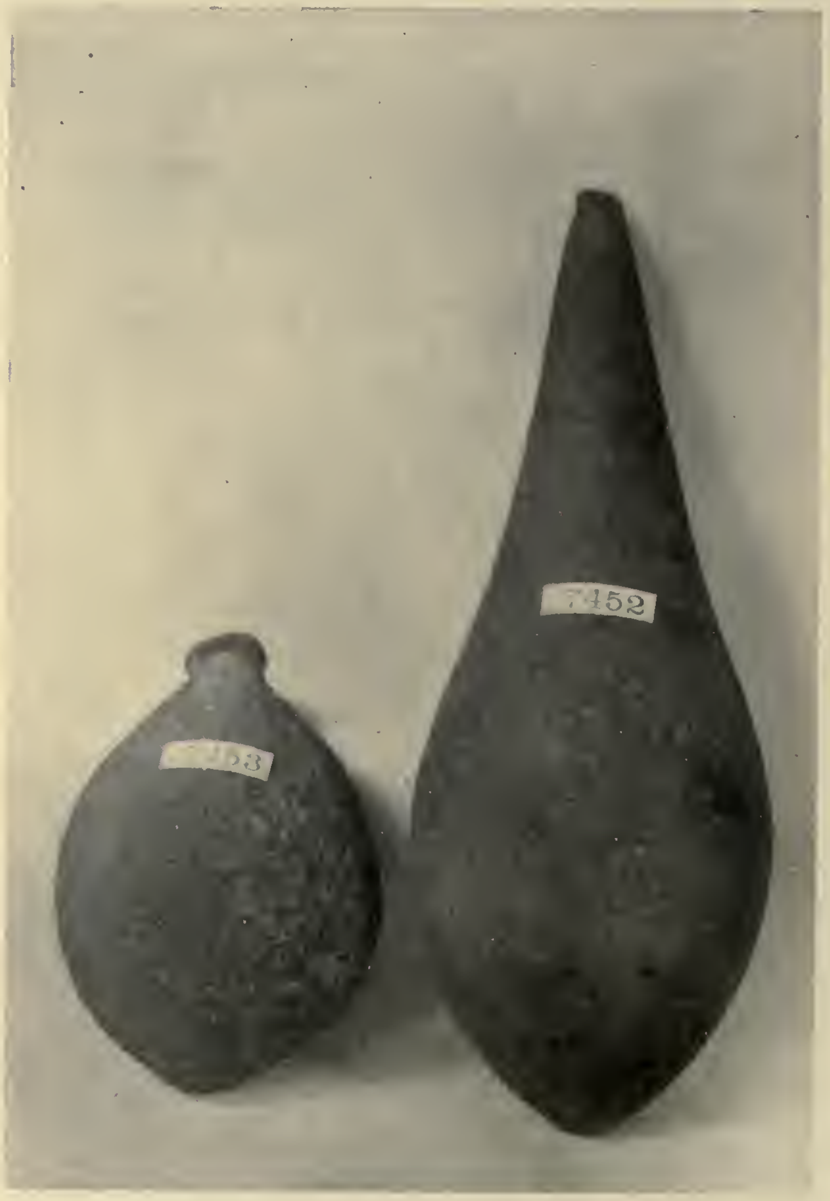

FIG. 72. HAWAIIAN FISHING STONES.

That the Hawaiian adze is peculiar and not very closely allied to those of New Zealand, as claimed by Moseley in the Voyage of the Challenger, nor indeed to any other of the Pacific forms will, I think be plain enough from the many illustrations herein given (Plates LIII. to LVII., and Figs. 74–79). As it has several times been asserted that Hawaiian and Maori adzes were more closely allied than those of any of the other Pacific groups, I have given illustrations of Moriori adzes (Figs. 81 and 82) from the Chatham islands as well as a series of the later Maori forms (Plate LIX.) probably derived from their predecessors. I have also shown the chisel-like greenstone adzes from the Solomon islands (Fig. 78) which differ most from the Hawaiian. The Hawaiian peculiarity consists in the parallel sides and angular tang, but it is not to one definite shape that all Hawaiian adzes conform. For instance, the plates show that parallelism of the sides is not constant and in the larger specimens there is a wide departure, but all the while there is a strong family resemblance among them all. To show the cutting edges of these tools more clearly than the photographs can I have made tracings (Fig. 74) of some of the more important examples illustrated in the plates and figures. The numbers will identify the specimens in both cases. The angle certainly seems too obtuse to cut well, at least on some examples, but the work done with them in the hands of an old Hawaiian remains to this day to silence all doubts of their capabilities.

Let us climb to the workshop of the adze maker. All these were in high places, and one on Mauna Kea, Hawaii, was nearly 12,900 ft. above the sea. As good clinkstone was not found in many places the known quarries hardly exceeded half-a-dozen. On Hawaii was the most important of all, that on Mauna Kea, where the workmen could only work in favorable seasons for the snow frequently covered the quarry, but from the immense quantity of fragments and chips the work must have extended over many generations; so far as known, this was the earliest quarry exploited, and it is puzzling how the place was discovered when we consider the aversion the Hawaiians had to even visiting those high, bleak and desert regions, the supposed abode of spirits not always friendly. It is possible that the tradition which speaks of the survivor of the deluge of Kahinalii grounding on Mauna Kea and following the receding waters to the lower levels, discovering the koi pohaku on the way, may point to the considerable antiquity of adze-making in this place, but I am inclined to believe that all traditions of the Hawaiian deluge date after the coming of the Spanish discoverers. It has

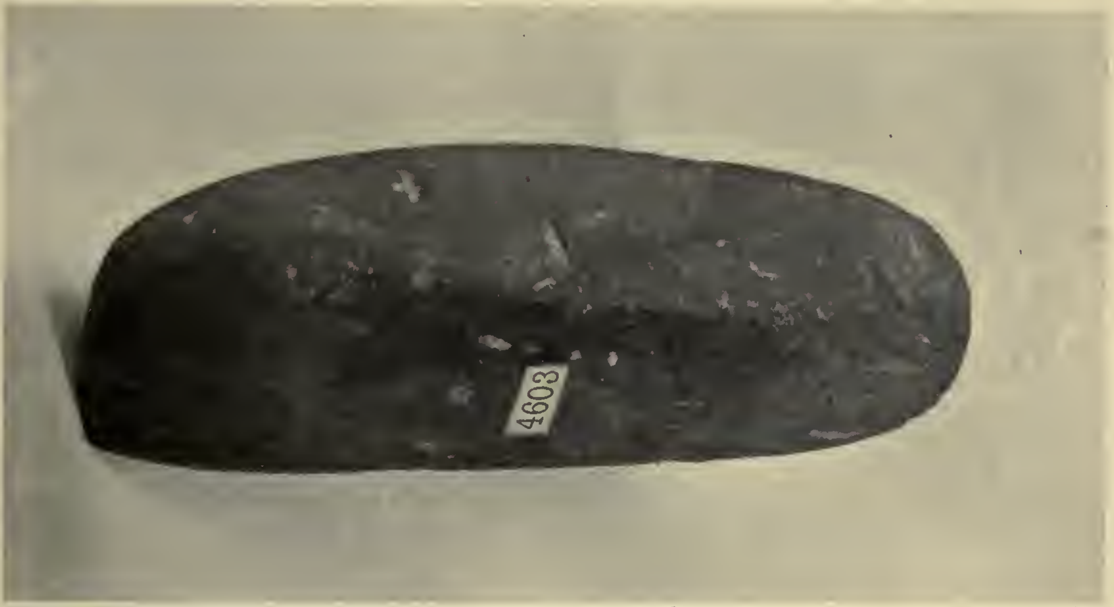

FIG. 73. HAWAIIAN STONE AXE.

always seemed strange that the axe-makers did not bring the raw material down to their homes and work it up in comfort instead of freezing in their kapa garments at this great altitude. It may be that the mystery of the place and its very solitude kept the trade in few hands and so enhanced the value of a tool that so many must have.

Another quarry on the same island was in an almost equally strange place, a lateral and deep crater of the volcano of Kilauea. The stone was obtained from the lower walls of the very deep pit and a subsequent flow of lava in the crater has covered all traces of the chips or working, but the name clings to the place (*Keanakakoi*, the workshop of the adzes), and there are masses of clinkstone, often of large size, scattered about the vicinage of Kilauea, apparently ejected by some explosive eruption like that of 1789. All the adzes from these two quarries are dark-colored and very compact. On Maui, far up the slopes of Haleakala, was a quarry which I have never seen, nor do I know the location. I know of no quarries on Oahu, although they may have existed, for clinkstone is found in fragments near Aliapaakai and elsewhere. On Kauai, above Waimea, the port where Cook first landed, are extensive quarries, and from these what knowledge of the working of adzes I may have was obtained. Various stone enclosures mostly in ruin and popularly considered *heiau* or temples are about the ridge where the clinkstone was worked, and while some were workshops or habitations necessary for shelter in that rainy region, there is every reason to believe that temples to the tutelary gods of the guild of adze-makers were there as well, for the ancient Hawaiians were a very devout people, acknowledging invisible superiors in all handicraft, and doing no serious work without invoking the aid and protection of these deities.

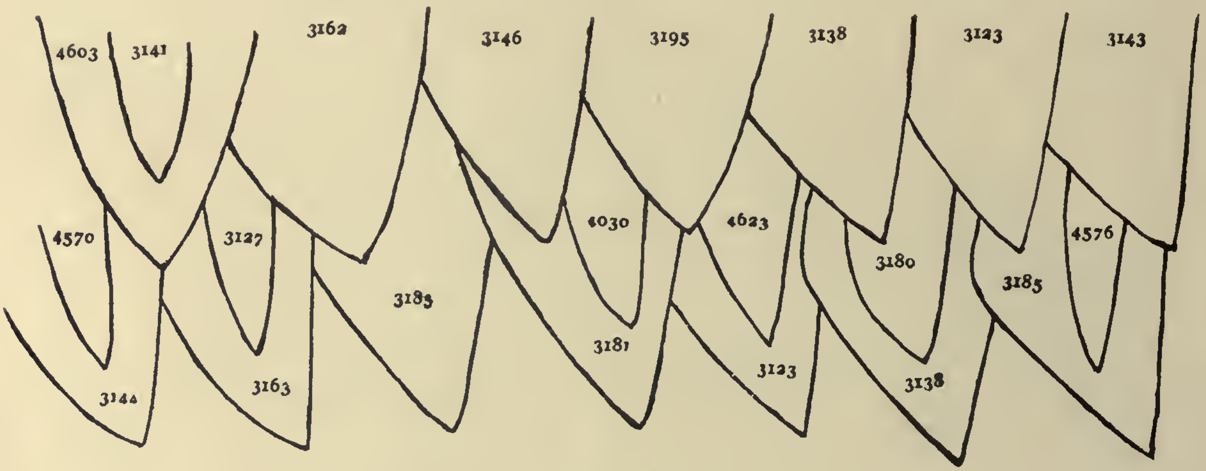

FIG. 74. CUTTING EDGES OF HAWAIIAN ADZES AND AXES.

Of course the making of stone adzes ceased soon after the introduction of iron and I have never seen them made, nor have I talked directly with any of the surviving makers, but I have seen them used and sharpened, and I have been astonished at the

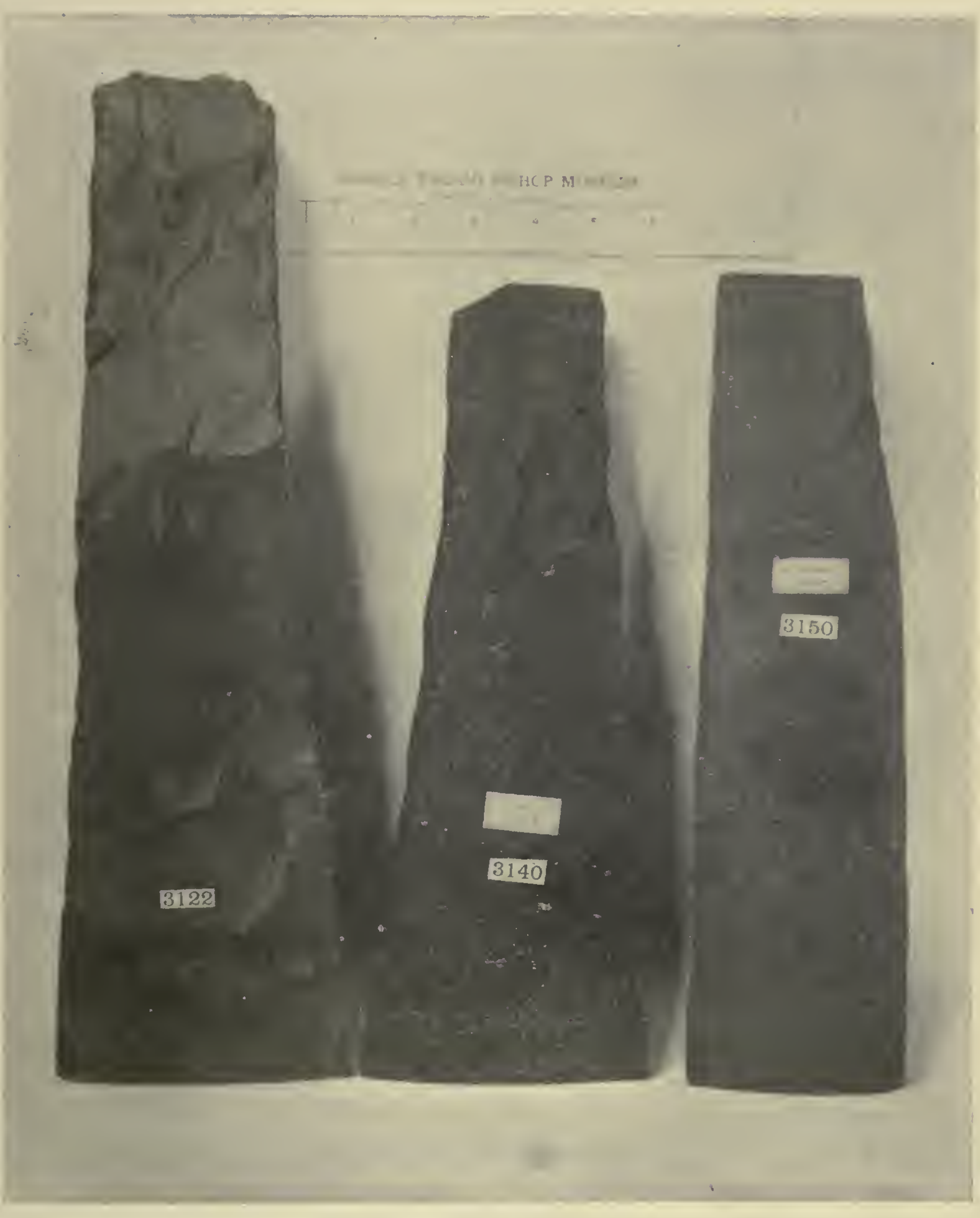

FIG. 75. HAWAIIAN STONE ADZES.

dexterity of the man and the efficiency of the tool. In watching the shaping of a canoe I have seen the old canoe-maker use for the rough shaping and excavating an ordinary foreign steel adze, but for the finishing touches he dropped the foreign tool and returned to the adze of his ancestors, and the blunt looking stone cut off a delicate shaving from

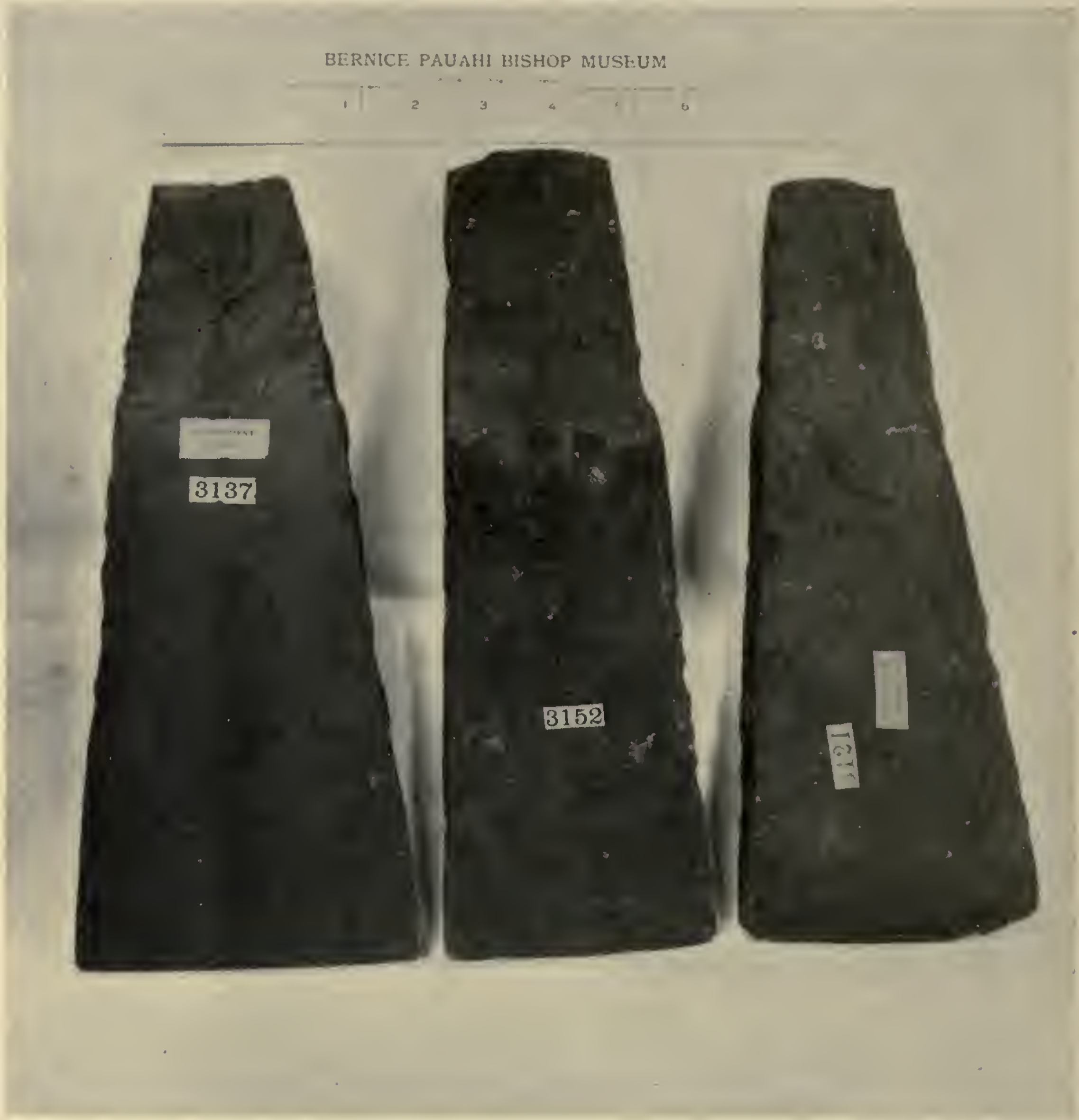

FIG. 76. HAWAIIAN STONE ADZES.

the very hard koa wood and never seemed to take too much wood as the foreign adze was apt to do. That skill was an important element in the use I was convinced, for with all the teaching of the native I could only make a dent where I tried to raise a shaving.

But to return to the ancient *Anakakoi*. The marks of fires, where the blocks of stone were heated to make sure there were no air cells to cause flaws in the *koi*, were common, and the cores, flakes (spalls) and shapeless fragments cover the ground, with here and there broken adzes, sometimes nearly finished before the unlucky break occurred. Plate LVIII. shows a series of "chips" from this workshop, obtained for me by Mr. Francis Gay, on whose estate the quarry is situated. These spalls and cores were obtained by the spalder with a rather heavy pebble hammer, but the nature of the stone is so different from the conchoidally fracturing flint that the shaping had mostly to be done by grinding, hence I was surprised to find few grindstones. Perhaps, as the workshop was abandoned long before the stone adze went out of use, the portable grindstones (See Fig. 9) were carried away to sharpen the old adzes, of which there was certainly a great supply. No stone implement is found so universally or abundantly all over the group. A study of this collection, small as it is, throws some light on the procedure of the old adze-makers. Apparently a number of spalls were chipped from the core when the fire test had proved the absence of air cells, and then a selection made for the various sizes and kinds of adzes desired, and it will be seen from Plate LVIII. that there was a great range in size, and even very small spalls might be utilized, as in No. 4602. The spall was chipped roughly into the desired shape, and if the stone was refractory and would not split as desired it was used for some other shape, or cast aside. Then the end intended for the blade was ground straight across as shown in No. 3, and to this normal the front and back were afterward ground. This first grinding served probably also to show the compactness or grain of the stone. No. 1 indicates that the sides were ground last, for in the fragment one side is ground smooth, the other partly. It will be seen on some of the many figures of adzes given that this finish was sometimes omitted on otherwise well finished adzes. No. 10 shows a partly formed adze with the sides ground and the blade broken away. No. 9 is a cellular highly silicious spall rejected as an impurity; in fact it seems a scum of the clinkstone. No. 15 is a fragment with large flat cells that have been exposed by the fire test.* No. 8 was fully formed for grinding and the edge was partly ground when the corner split off and the work stopped. No. 16 shows half of a spall of very heavy clinkstone suitable for a short adze or a scraper without tang. No. 19 seems to have been formed as far as possible by chipping and was ready for the grinding that never came. No. 4 shows a fragment of a rare form shown more fully in Fig. 77, which represents an adze (full size) of unknown use with the blade at an angle of 75°, with the axis of the adze like a turner's chisel. This is in the possession of Professor Curtis J. Lyons, of the Government Survey, who kindly lent the specimen for illustration. I think these adzes (of which I have seen only these two

FIG. 77. HAWAIIAN ADZE WITH OBLIQUE BLADE.

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* It is generally the case that where cells occur in otherwise closegrained lava that the application of heat gives explosive force to the imprisoned air or other gas, and once while camping on Olokui, a mountain of Molokai, I built a fireplace of compact fragments of stone, and as the heat of the fire permeated the stones explosions so violent took place that we were obliged to move away for safety.

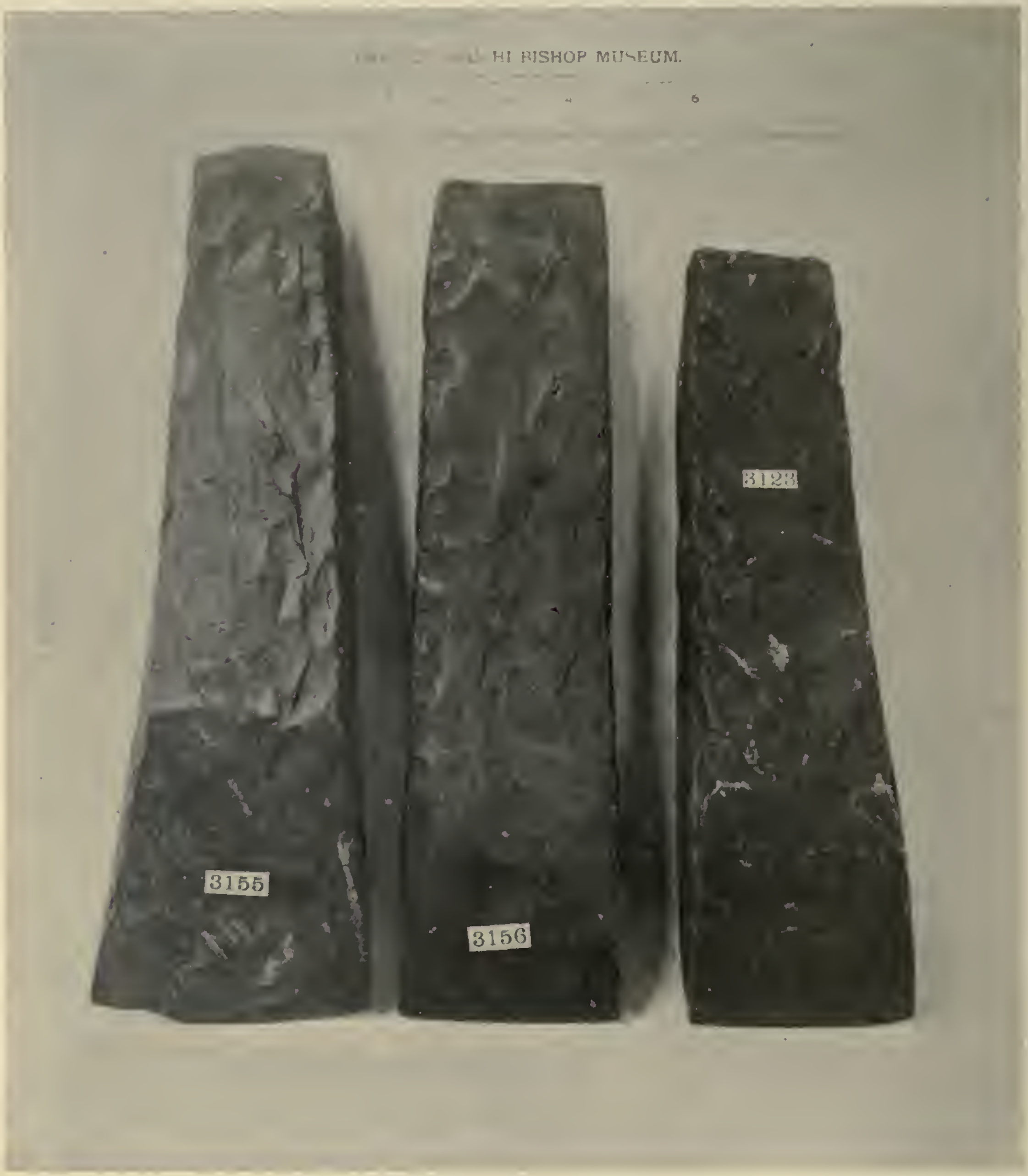

FIG. 78. HAWAIIAN STONE ADZES.

Hawaiian, but many Maori) were used in carving the large idols. Another unground but nearly shaped adze of large size is shown in No. 3153 of Plate LIV., found, I believe, at this same Kauai quarry.

Adzes may, for convenience, be classed in three divisions: with parallel sides and angular tang, *e.g.*, Fig. 79, No. 3447; Plate LVII., No. 3136; Pls. LV. and LVI.: with divergent sides and angular tang, *e.g.*, Fig. 78, No. 3155; Fig. 76, No. 3137: with divergent sides, thin and nearly flat, *e.g.*, Fig. 76, No. 3121; Fig. 78, No. 3123.

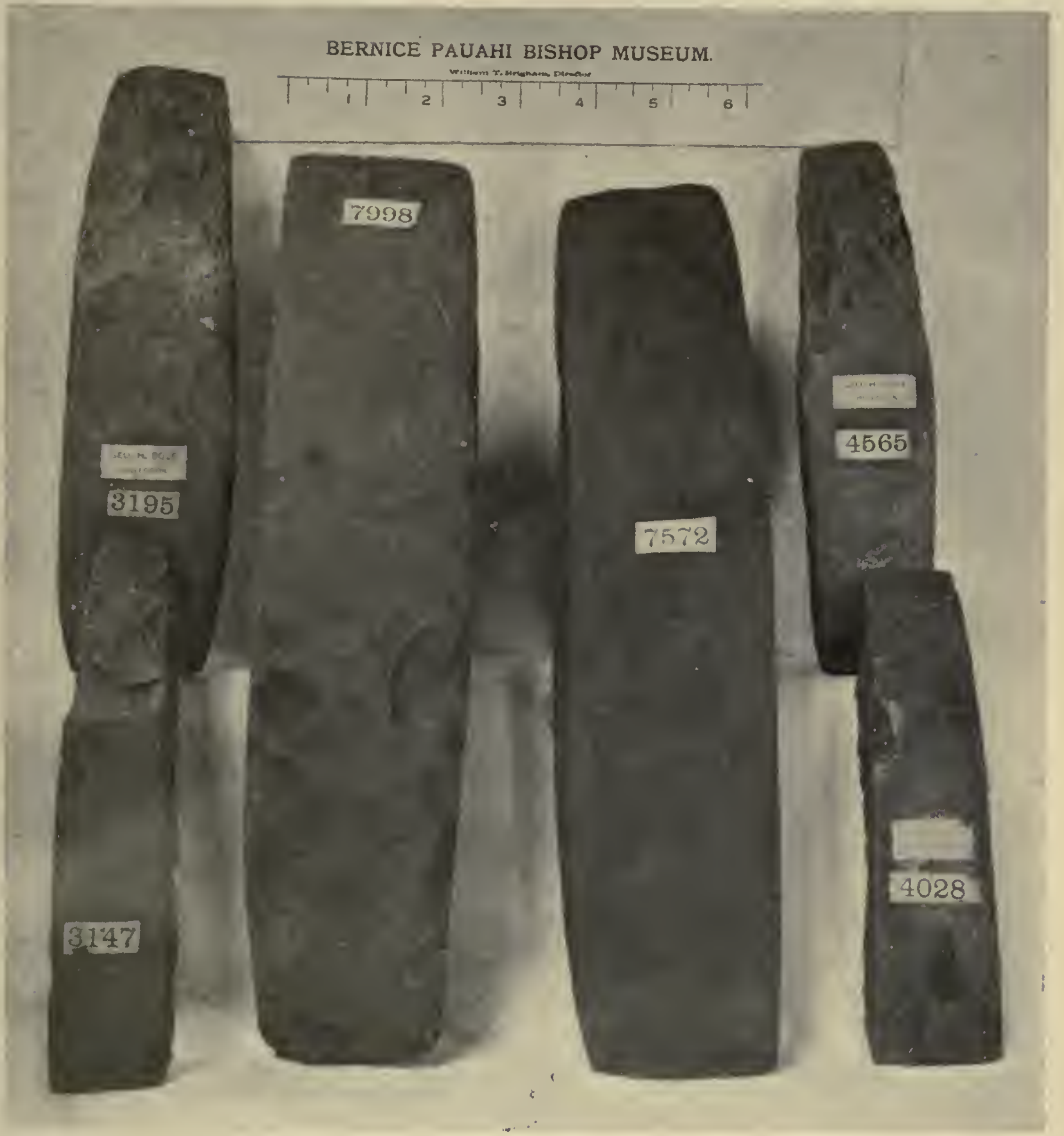

FIG. 79. HAWAIIAN STONE ADZES.

That each of these was fitted for particular work I do not doubt, but I cannot go any farther. The hardness of the wood influenced to a marked degree the angle of the cutter, and in very soft wood, such as wiliwili (*Erythrina monosperma*), coconut shell or alahee wood was substituted for stone as admitting a more acute angle for the edge. Plates LV. and LVI. and Fig. 72 show some variation. As the under surface is a curve it presents a constantly changing angle. The angles, as nearly as can be measured, vary from 34° to 78°; the weights from eleven pounds to less than an ounce, and the width of the cutting edge from an eighth of an inch to six inches. Placing the adzes figured in tabular form we have the following:—

Number.	Length.	Width of blade.	Weight.		Notes.
			Lbs.	Ozs.	
Figure 73.—4603.	7.5 in.	2.5 in.	2	13	Axe, found on Kauai; 65°.
Figure 75.—3122.	16	4.6	10	7	Well wrought, found on Kauai.
3140.	12.8	4.5	7	1	Honuapo, Kau, Hawaii.
3150.	13.2	3.3	5	.5	Grey phonolite.
Figure 76.—3137.	11	4.5	4	7	Broad and flat, dark phonolite.
3152.	11	3.6	4	8	Edge of blade chipped.
3121.	10.7	4.1	10	7	Finely finished, flat, black phonolite.
Figure 78.—3155.	13	4	7	8	
3156.	12.5	3.15	4	4	Dark phonolite.
3123.	11.5	3.2	5	7	Well wrought; found on Kauai.
Figure 79.—3195.	8.5	1.6	2	4	Blade broken; Kauai.
7998.	11	2.2	5	..	Another view is given on Plate LVI.
7572.	11.4	2.2	4	3	See also Plate LVI.
4565.	7	1.3	1	4	Kauai.
3147.	6.8	1.2	..	11	Liliuokalani collection.
4028.	6	1.5	..	12	Kauai.
Plate LIII.—3125.	13.5	4.7	11	..	All on this plate are in the rough and entirely unground. No. 3139 is a darker clinkstone.
3139.	13.2	3.3	4	10	
8679.	11.8	4.2	5	13	
Plate LIV.—3153.	13.5	4	6	6	Blade much damaged; Queen Emma.
6738.	13.4	3.7	5	..	Kona, Hawaii.
8931.	13.5	3.7	4	4	Dark phonolite, thin.
Plate LV.—3122.	16	4.6	10	7	Found on Kauai; 36°.
3150.	13.2	3.3	5	5	Angle to tang=32°.
3155.	13	4	7	8	Waianae, Oahu; light colored phonolite.
Plate LVI.—6738.	13.4	3.7	5	..	Kona, Hawaii; front on Plate LIV.
8931.	13.5	3.7	4	4	Front view on Plate LIV.
3152.	11	3.6	4	8	Edge of blade chipped.
7998.	11	2.2	5	..	Peculiar form of tang.
7572.	11.4	2.2	4	3	Form similar to No. 7998.
3167.	6.5	1.7	2	6	Polished on all sides; "*Na kini mahoe.*"
3156.	12.5	3.15	4	4	Front shown in Fig. 76.
Plate LVII.—4576.	6.9	2.5	..	12.5	Grey phonolite, very thin; Kauai.
4577.	5.7	2.1	..	8.5	Black phonolite, from Kauai.
4562.	4	1.4	..	5	Well wrought, from Kauai.
3135.	4.1	1.65	..	5	Kauai.
4586.	3.7	1.7	..	7	
4593.	4.1	1.4	..	6	Blade chipped, from Kauai.
4585.	3.9	1.2	..	4	Blade chipped.
4572.	4	1.5	..	6.5	Well ground, from Kauai.
3180.	4.6	1.2	..	8	Dark phonolite; Palama, Oahu.
3176.	4.9	1.6	..	7	Well wrought, dark stone.
3141.	7.5	2	..	12	Axe of dark phonolite, thin.
3129.	2	0.6	..	1	Kauai.
4607.	2.7	1	..	2	Good polish.
3131.	2.3	0.8	..	1.5	Finely wrought.
4574.	3.2	1.6	..	3	Grey phonolite stained with red earth.
4606.	3.3	1.2	..	3	
4580.	3	1.2	..	3	Dark phonolite, from Kauai.
4588.	3.5	1.7	..	6	
4034.	3.2	1.3	..	3.9	Well shaped.
4033.	3.4	1.6	..	4	Rough.
4031.	2.5	1.2	..	1.5	Much like obsidian.
4030.	3.1	0.6	..	2	Polished all over.
4620.	4	0.7	..	4	Blade broken.
5305.	4.1	1.1	..	4.7	Dark phonolite.
4608.	3	0.8	..	1.5	Rough work.
3132.	2.5	1.4	..	3	Broad and short, Kauai.
4582.	2.9	1.2	..	2.5	
4602.	1.5	0.12	..	0.4	Finely polished chisel; Kauai.
3133.	2	0.9	..	1	Kauai.

	Number.	Length.	Width of blade.	Weight. Lbs.	Weight. Ozs.	Notes.
PLATE LVII.—	4583.	2	1	..	1	Brown phonolite, well wrought.
Continued.	4581.	1.8	0.8	..	1	
	4591.	2.2	1	..	2	Tang broken.
	4564.	2	1.1	..	2	Kealia, Kauai.
	4595.	2.6	0.8	..	2	Rudely wrought, obtuse angle.
	4038.	2.2	0.7	..	1	Polished only on top.
	4578.	2.5	1.1	..	1.5	Polished all over.
	4037.	2.4	0.8	..	1.7	
	4601.	1.4	0.6	..	0.7	
	4036.	2.3	0.6	..	1	Kauai.
	4039.	2	0.7	..	1	Grey phonolite, no polish.
	4600.	2.7	0.8	..	1.5	Kealia, Kauai.
	4599.	2	0.6	..	1	
	4598.	2.2	0.7	..	1	
	3136.	21.7	2.1	9	4	Found in a walled-up cave wrapped in kapa; evidently highly valued.

The last example in the list, which I have photographed with the small adzes to show the extremes, is peculiarly interesting not only from the circumstances mentioned, but for the remarkable length. It might have been used to cut the interior of coconut wood drums, or of deep canoes, or even umeke; but if so used why give it solitary entombment in a burial cave? There were no human remains nor anything else in the small cave, so the finder declared. Although the kapa is very durable in dry places it must have mouldered before all traces of a skeleton could have vanished. The adze is likely to remain a mystery. No. 4602, if used as a chisel, must have had some sort of handle, as the fragment is too minute to grasp firmly. It may have been intended for a borer to use with the pump drill, but it shows no signs of attrition on the vertical edges. As a mechanical proposition it seems difficult to get any efficiency from an ounce of stone used as an adze, unless indeed it had a weighty handle like the New Caledonian adze shown in Fig. 86 A and B. For felling trees the heavy and broad adzes, like No. 3121 or 3122, I have found by experiment quite suitable.

It is worth while noting that there is in the Bishop Museum an adze (No. 3115, not figured) which was in actual use so recently as 1886, and although the stone has been replaced by a plane-iron, the peculiar form remains in the old handle. The latest stone adzes I have seen in use date back to 1864, although I have no reason to suppose that they were abandoned for some years after that.

We may now examine a few other adzes from the Pacific Region, that their points of variation from the Hawaiian model may be noted. The Solomon islanders had a chisel-like axe or adze which not infrequently became more of a gouge than chisel. The material is always a dark green stone, neither so fine-grained nor so hard as the New Zealand greenstone. In all specimens I have seen the section is either circular or elliptical. I do not claim that all adzes from the Solomon islands are alike, for I do not know of more than a few dozen in all foreign collections, and no study has been made of them in their own country. Fig. 80 shows the two commoner forms, and Fig. 81 three of the chisel form which I obtained in Hamburg from the Godeffroy collection. All are exceedingly well finished and might have been held in the hand when in use; I do not know the method of handling them. There are two adzes in the Bishop Museum of which the provenance is uncertain, and they are shown in Fig. 82. No. 3149 seems to belong to the Society islands, and it will be noticed that the sides are sloping instead of as in the Hawaiian vertical. The other one in the same figure (No. 7878) I attribute with very little doubt to New Zealand. Its main peculiarity is the transverse ridge on the face, not an uncommon feature in Maori adzes, which seems to have served to keep the handle in place.

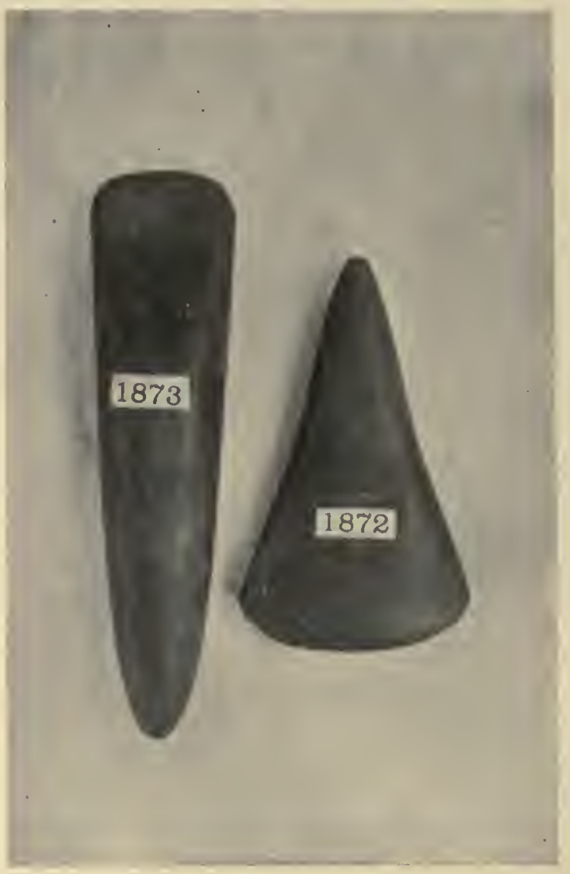

FIG. 80. SOLOMON ISLANDS ADZES.

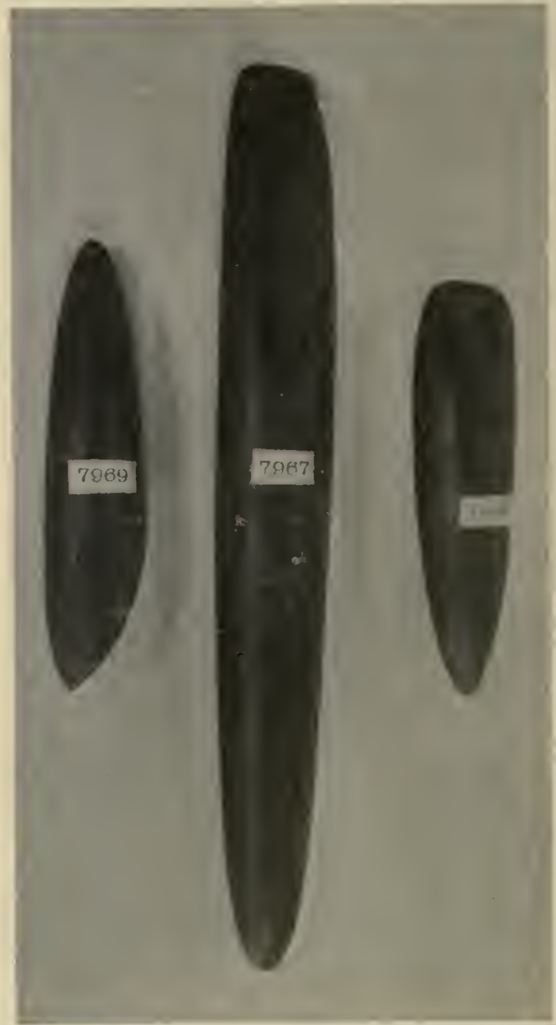

FIG. 81. SOLOMON ISLANDS ADZES.

We come now to the Maori adzes, which have been considered most closely related to the Hawaiian. In Plate LIX. are shown ten specimens of considerable variation in form, and I cannot believe that their total dissimilarity to the Hawaiian forms is due solely to the different material used in the two groups (greenstone* and phonolite). In three of the specimens (6952, 6944 and 1507) we see the angular blade already noticed in Hawaiian specimens,—in all such cases the tools are small, weighing but a few ounces. The angular tang so prominent in the Hawaiian is absent in the Maori; so are the perpendicular sides, and the edges are generally rounded, or in some cases (1504) beveled on the front side.

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*As will be seen in the table on page 86, many of these Maori adzes are made from a volcanic stone resembling phonolite but distinct from the Hawaiian variety. New Zealand being a volcanic country with a great variety of lava, including obsidian, the worked stones offer much greater diversity than on the Hawaiian group, where the volcanic ejecta are comparatively uniform.

The Moriori predecessors of the Maori, whom the latter drove from the main islands to the little group of the Chatham islands, where they are now practically extinct, had a form of adze closely allied to the Maori but presenting several peculiarities. Those shown in Figs. 83 and 84 were collected many years ago by a resident of the Chatham islands and are supposed to show fairly the forms. In the first figure the two stiff, sharp-angled stones are of a remarkably fine finish, surpassing in some respects any Pacific ocean adzes I have seen. No. 8586 is large, and even the tang is rounded to suit the cord that attached it to the handle. The front is slightly convex and the blade is consequently curved, but the other sides are true as if planed. The smaller one of the same pattern is flat on all sides. The material is a hard, brittle, steel-grey, volcanic stone. In Fig. 82 a greater variety is shown, and here there is a nearer approach to the Hawaiian. The material is a volcanic stone containing considerable masses of olivine, often colored red by decomposition. I have not recognized this stone in any other adzes, and I do not know whether it is found on the Chatham group.

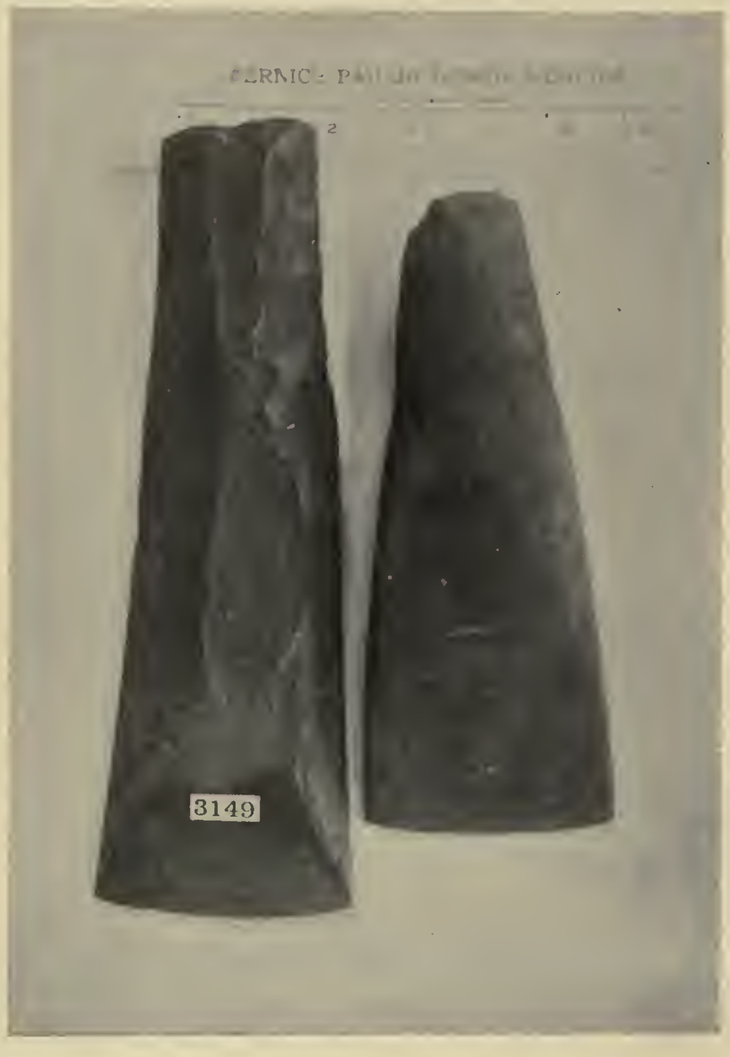

FIG. 82. SOUTHERN PACIFIC ADZES.

In Micronesia shell replaced the stone, which is not found on the low coral atolls, and the shape was comparatively uniform throughout the region making use of shell. Sometimes flat, when the exigencies of the shell demanded this starved form, but usually thick, semi-cylindrical, the edge ground toward the flat side, thus leaving a curved cutting edge as shown in Fig. 83. These shell adzes were probably as durable as stone, and they are said to be still in use on the smaller islands where there is little trade. In New Guinea the adzes were often rudely formed of a volcanic stone, or of greenstone, and in shape often approach the Hawaiian, as shown in Fig. 85, Nos. 1552 and 1553. In the same group the axe No. 1800 is of finer make.

The sizes and weights of these non-Hawaiian adzes are given in the following table:

Number.	Length.	Cutting edge.	Weight.		Notes.
					SOLOMON ISLANDS:
FIGURE 80.—1873.	6.5 in.	1.6 in.	.. lbs.	10.5 oz.	Greenstone; Florida.
1872.	4.5	3.6	..	6.7	Greenstone; Florida.
					SOLOMON ISLANDS:
FIGURE 81.—7969.	6.2	1.2	..	11	Greenstone; edge like finger-nail.
7967.	12.6	1.2	1	12	Greenstone; edge like finger-nail.
7968.	5.9	1.2	..	10	Greenstone; edge like finger-nail.
					SOUTHERN PACIFIC:
FIGURE 82.—3149.	10	3.2	1	8.5	Greenstone lava; Mrs. Bishop's collection.
7878.	8	3.1	1	9.2	Greenstone of light color; Maori.
					NEW ZEALAND:
PLATE LIX.–6952.	3.4	1.5	..	2.5	Thin jade, angular blade, sides unfinished.
1502.	7	2.8	1	7	Brown lava.
1503.	13.9	2.7	7	12	Blade chipped, transverse ridge, no tang.
1504.	8.2	2.5	1	15.5	Grey stone; sides beveled on top.
6948.	4.9	2	..	10	Brown lava.
6945.	6.4	1.8	1	..	Rounded on all sides; grey lava.
6946.	5.4	2.1	..	13.5	
6944.	3	2.1	..	5.5	Dark phonolite; angular blade.
1507.	3.3	2.3	..	6.5	Light greenstone; blade at angle.
6947.	5.9	2.6	4	..	Grey lava; sides beveled.
					CHATHAM ISLANDS:
FIGURE 83.—8586.	13.7	3.9	6	7	Grey lava.
8585.	8.5	2	1	6.7	Grey lava, flat on all sides.
					CHATHAM ISLANDS:
FIGURE 84.—8587.	8.5	2.8	1	13	Reticulated lava with much olivine.
8593.	2.9	1.2	..	2.7	
8594.	2.9	1.6	..	3	
8595.	2.3	1.6	..	3	Angular edges.
8596.	3.7	1.9	..	5.5	Rudely finished.
8592.	6.5	2.5	1	9	
8588.	5.6	2.5	..	8.2	Thin.
8589.	6	2.2	1	..	
8590.	4.6	1.9	..	6	
8591.	2.9	1.2	..	2.7	Thin, edge re-ground.
					MARSHALL ISLANDS:
FIGURE 85.—7534.	11.5	4(6 circ.)	5	..	Cut from shell of *Tridacna gigas*.

Handles for the Adzes.—While this portion of our study seems to rightfully belong to the consideration of Tools and their use, it may fairly claim a place here for brief treatment, for otherwise the stone appears of little use, and the relationship of these stones is partly explained by the peculiarities of handling. To use their *koi pahoa** the Hawaiians had a handle generally of hau wood (*Paritium tiliaceum*) cut with a heel to which the tang of the stone was attached by cords of oloná or coconut fibre, a bit of kapa or dry leaf of pandanus or banana being inserted between the wood and stone.

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* While the term *koi pahoa* properly applies to the narrow sort with parallel sides like a chisel, custom has extended its use to almost all forms of stone adzes.

(No. 3101, Pl. LX.) This form shows little variation except in length or curve of handle. The hau tree is well fitted for this purpose, the wood being light and tough, and the branches naturally curved. The very name of the tree signifies "handle tree" (*he au* = *hau*).

Besides this simple form there was a more complicated one especially designed for the *poe kalae waa* or canoe makers, in which the stone blade was not fastened directly to the handle but to a tongue, which in turn was attached to the handle in such a way as to be movable on its axis and so serve for a right- or left-handed cutter (No. 3116, Pl. LX.). Among the Hawaiians this was traditionally the invention of a skilled canoe-maker, afterwards deified, Kupaaikee, who not only bequeathed his name but also his *elelo* (tongue) to this form of handle. Traditions are very pretty and interesting matters, but one must not trust much to their guidance, and in the present case we know that the people of the northern coast of New Guinea have had the same ingenious form from time immemorial, and some of the other islanders had an even simpler form for effecting the same purpose, as shown in Fig. 83, No. 1800 from New Guinea, and in c. of Fig. 84 from the Bismarck archipelago. In the New Guinea form, in my opinion the progenitor of the Hawaiian, sleeves of braided rattan are used to hold the rotating blade, while on Hawaii coconut cord serves the same purpose, the former palm not extending eastward in the Pacific. In the Caroline islands the portion to which the stone (shell) was fitted had a projection against which the head of the adze rested (Fig. 83, No. 8063), giving additional firmness. In the Marshall islands the form of the Kupaaikee adze appears rather clumsy, but the original purpose has disappeared, the blade being immovable.

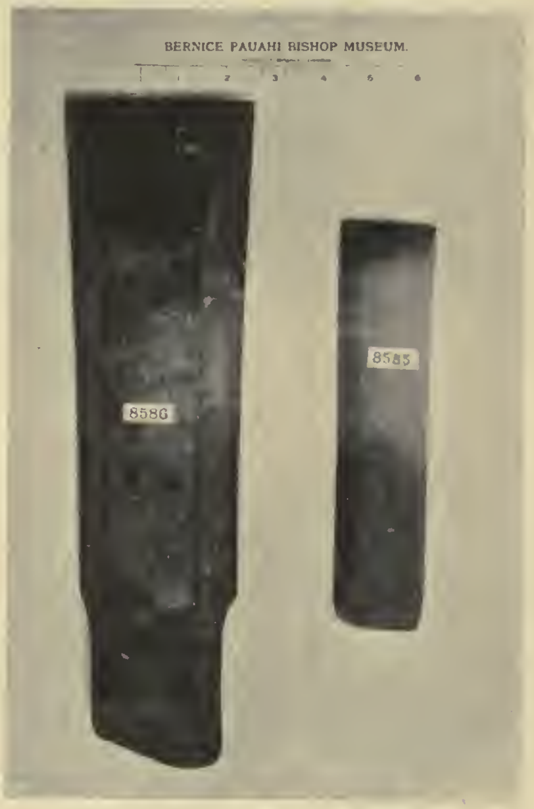

FIG. 83. MORIORI ADZES.

Laying the museums of Europe under contribution, we have in Fig. 86 some other Pacific handles. The two from New Caledonia show in a rather clumsy form the ingenious method of giving weight to the adze by a heavy block of wood, hemispherical in form, adding much to the efficiency of the tool. These handles are often in one piece, but sometimes hand-piece and socket for the blade are inserted into the block. In the specimen from the Dresden museum the blade socket can revolve in the

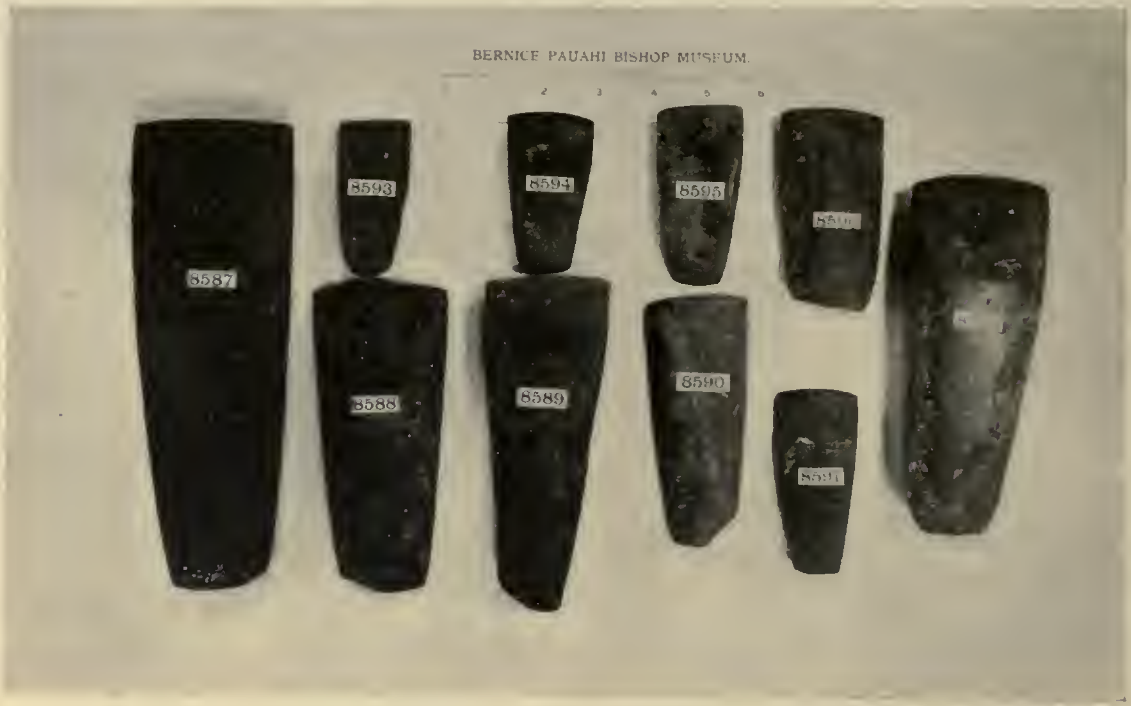

FIG. 84. MORIORI ADZES.

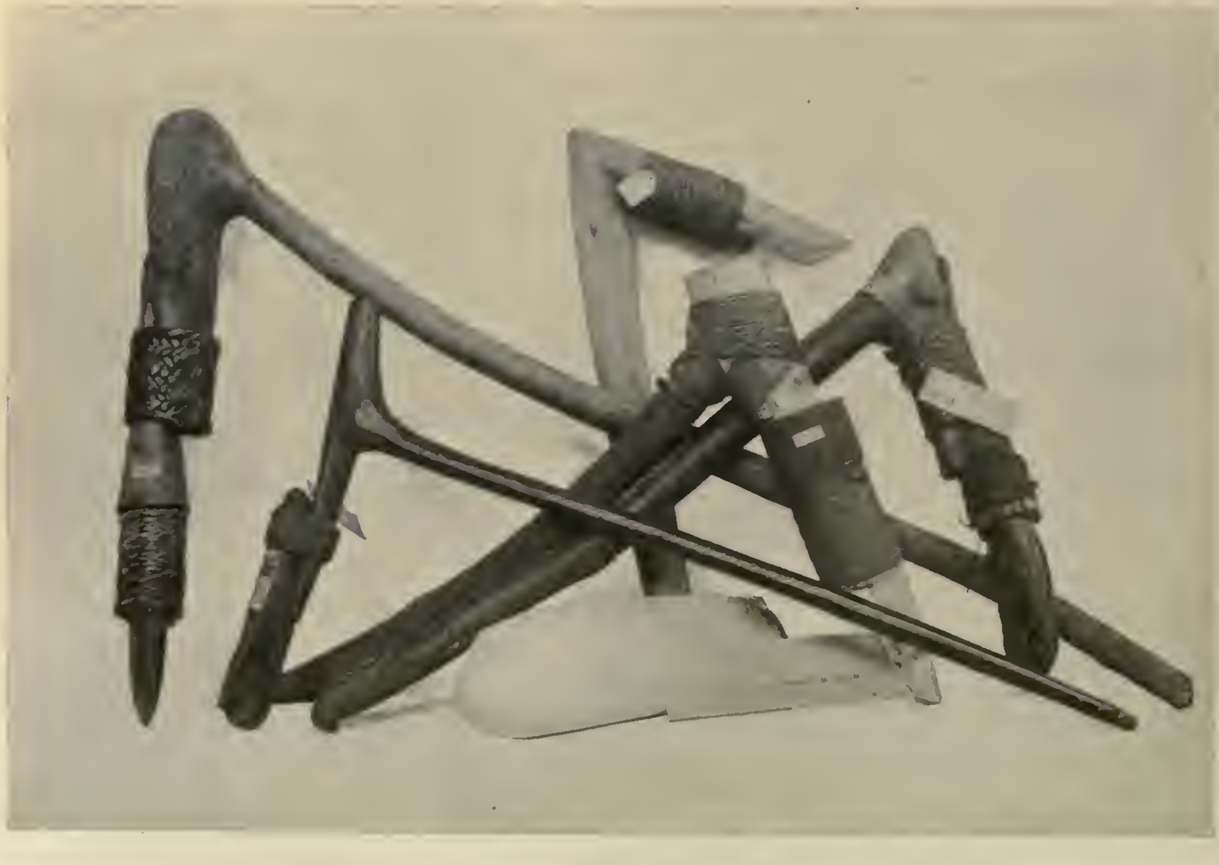

FIG. 85. HANDLES OF ADZES FROM NEW GUINEA AND MICRONESIA.

club-like handle to which it is also attached by a cord. In the Berne museum is an adze from Tahiti which seems to be the Hawaiian form reversed, and it makes a simple handle. The specimen in the Hamburg museum attributed to the Marshall islands seems to be unique and differs greatly from the ordinary handles of that group, as shown in Fig. 85; Herr C. W. Luders should, however, be well informed on the locality. The knob is the puzzling feature. In F, the specimen from the Berlin museum, we have perhaps the most primitive method of handling.

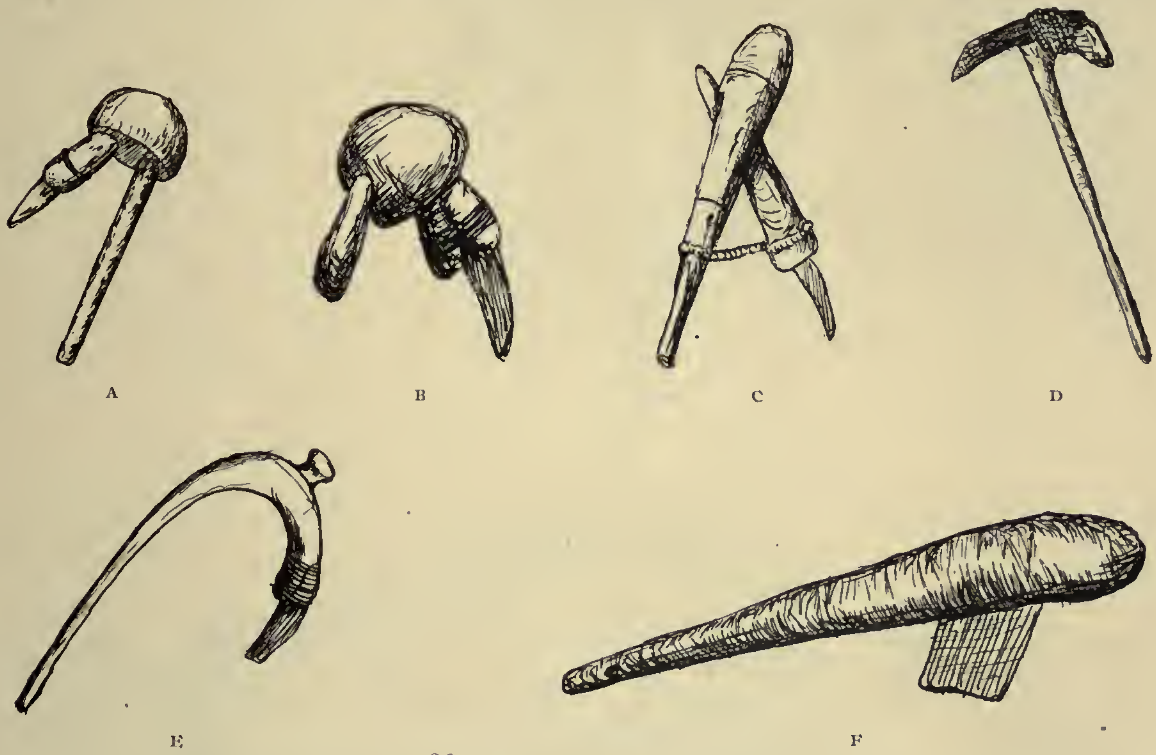

FIG. 86. VARIOUS ADZE HANDLES.

A. New Caledonia, in the Vienna Museum.
B. New Caledonia, in the Copenhagen Museum.
C. Bismarck archipelago, Dresden Museum.
D. Society islands, in the Berne Museum.
E. Marshall islands, in the Hamburg Museum.
F. Hermit islands, in the Berlin Museum.

To return to the specimens at hand: two adzes from the Gilbert islands, shown in Fig. 87, closely resemble the Hawaiian form, although the stone is replaced with shell; but I am by no means sure that these handles, which were obtained within a few years, represent the ancient form. They may have been taken from Hawaiian patterns, the intercourse between these groups having been close since the establishment of the Hawaiian Board of Missions some fifty years ago. The Maori adzes shown in Fig. 88 have been handled within twenty years, and are supposed to show the ancient form. It will be noticed that feathers are used to decorate, much as on the tomahawk of the Amerind, and these adzes or axes were used as weapons by the Maori, one or both of these specimens having been found on a famous battle field.

Another form of stone axe or adze must not be wholly passed by, the ceremonial or sacred axe from Mangaia, of the Hervey group, well represented in every large museum, and here shown in Fig. 89; and with this another, not so well known, from Duau (Normanby), of the D'Entrecasteaux group (Pl. LXI.). The Hervey islands handles are carved with great delicacy, and it is difficult to believe that they were cut with so rude an instrument as a shark tooth, but such was the case. The patterns are believed to be of a sacred nature, and their origin has been ingeniously suggested by my friend Mr. Charles H. Read, the distinguished archæologist of the British Museum.* The Duau specimens are of very different form, and have in comparison little decorative carving; the blades are flat and of jadeite; the handle of No. 1551 (Pl. LXI.) was originally ornamented with feathers. The handle of No. 1552, on the same plate, is neatly carved and a bone disk is fastened to the inner angle. In both the blades are rather insecurely attached by bands of rattan. Still another specimen of these decorated handles may be given from the stores of the Bishop Museum; it comes from New Zealand, that home of fine wood carving, and is shown in Fig. 90.

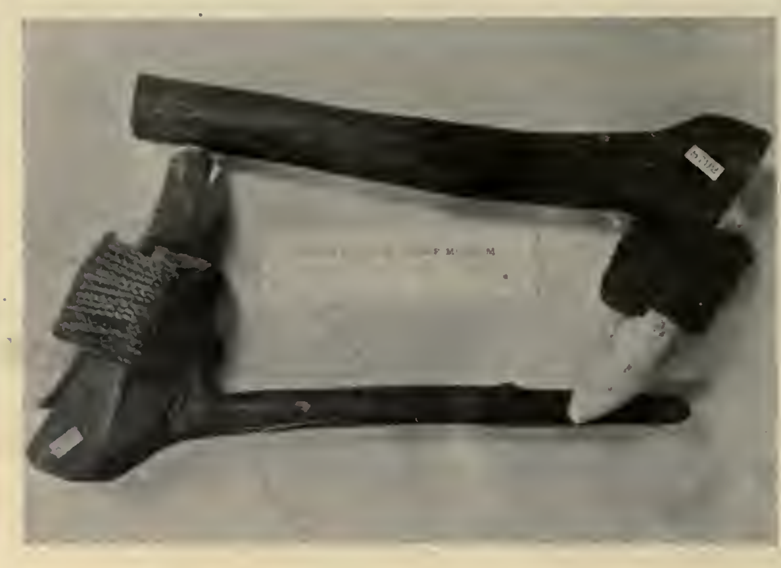

FIG. 87. GILBERT ISLANDS ADZES.

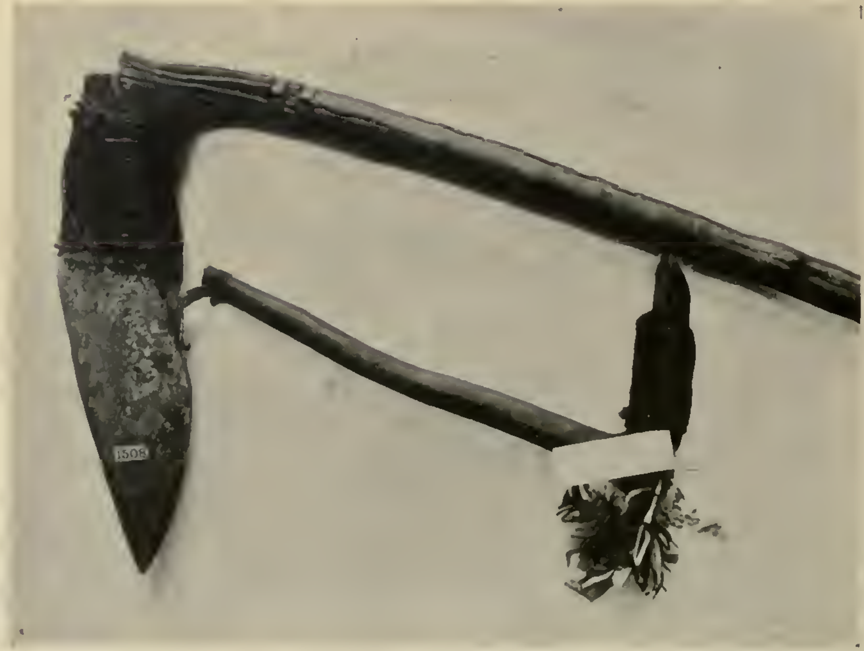

FIG. 88. MAORI ADZES.

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*On the Origin and Sacred Character of certain ornaments of the southeast Pacific. Journal of the Anthropological Institute, XXI., p. 139.

In all cases the intention seems to be to honor the stone implement rather than the temporary owner. As the warrior in mediæval times held his sword in reverence, so the artisan of the stone age regarded his principal tool as most worthy of honor.

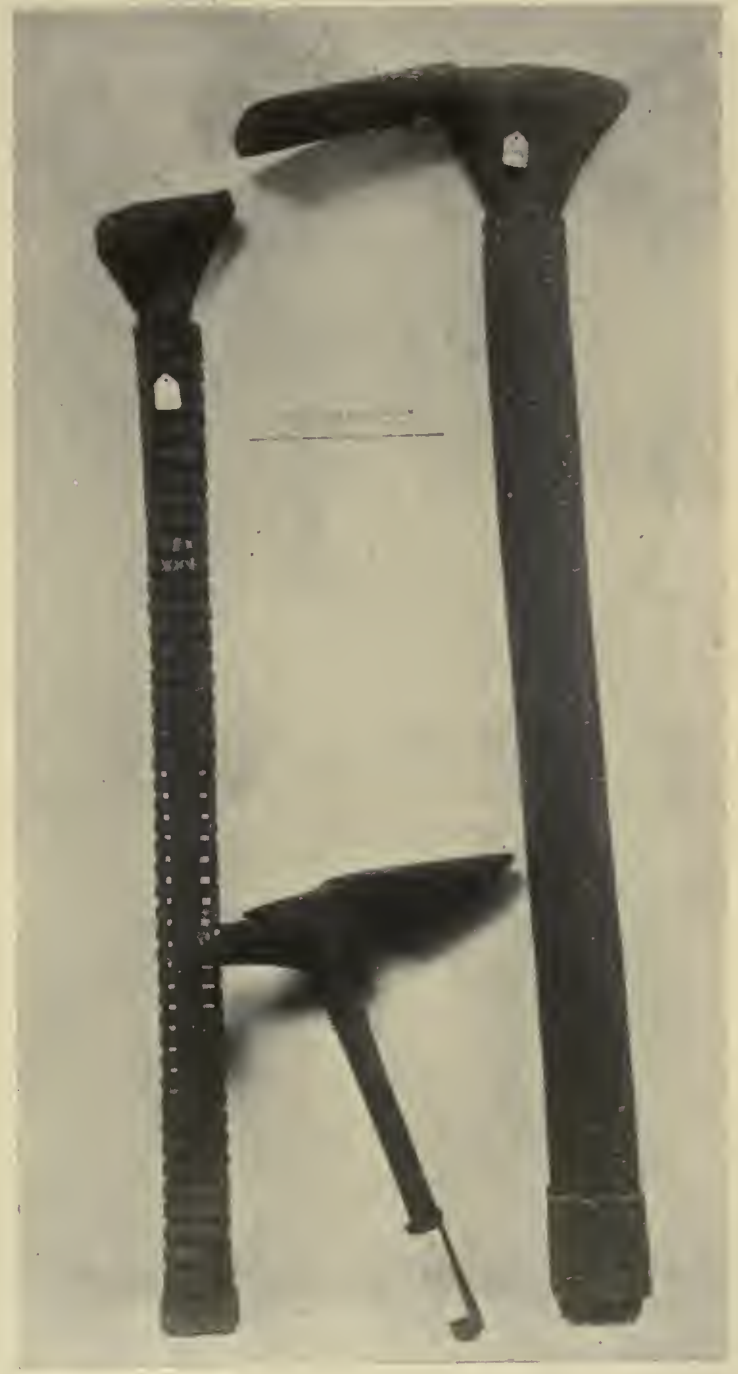

FIG. 89. CEREMONIAL ADZES FROM MANGAIA.

Chisels and Gouges.—We have seen in the illustration of the adzes of the Solomon islands (Fig. 81) forms closely adapted for cutting grooves or for the more general work of a chisel, and among the ancient Hawaiians both chisels and gouges were in use during the period preceding the introduction of steel. So far as my experience goes the latter tool was more commonly formed from a marine shell (*Mitra* or *Terebra* sp.), the basal portion being ground at a suitable angle, while the tapering apical end served conveniently for a handle. The Bishop Museum has lately, however, come into possession (in a lot of material recently used in heathen practices) of a well-made stone gouge which is shown in Fig. 92. It is 5 in. long, 0.6 in. wide at the cutting edge, and weighs 3.5 oz.

About the same time Mr. Paul Hofer gave to the Museum the finest stone chisel that I have ever seen. This is shown in Fig. 91, and is 6.8 in. long, weighs 7.7 oz., and has a cutting edge of 0.5 in. Of a form suitable for holding in the hand it must have been a serviceable tool for carving images or the like, and certainly required no handle. It has been carefully ground on all sides in such a way that it

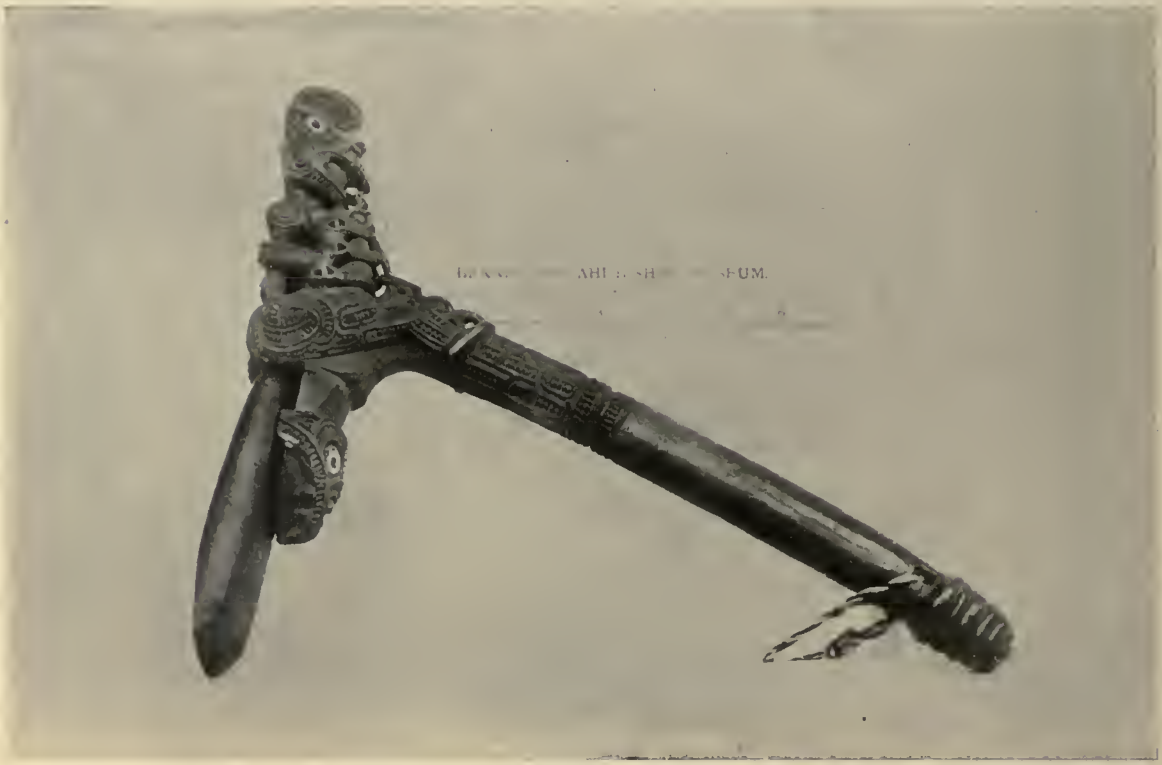

FIG. 90. MAORI CARVED ADZE HANDLE.

tapers to each end. Doubtless buried in a moist place for many years its present surface much resembles rusty iron. Another gouge in the collection (No. 4555) is 3.5 in. long, 0.6 in. wide at cutting edge, and weighs only 2.2 oz. It is ground smooth and well rounded, and with the gouge shown in Fig. 92 seems to have been used in carving the large idols. At least the curved edge exactly fits the interior curve of the nostrils in two of the large idols in this Museum. The smaller gouge must have required some sort of handle, as it is too short to hold firmly in the fingers.

Stone Figures.—Of the few animals that fell under the observation of the ancient Hawaiians the dog and pig were by far the most cherished, but I have never seen any image either in wood or stone of these domestic animals, and neither was raised to the dignity of a god, although the deified hero Kamapuaa was half hog half man. Was the totemistic idea too powerful to admit of deifying the limited articles of animal food and so banishing them from the larder? With certain fish the case was different, and the Shark god was one of the most powerful of the minor deities; hence probably we have a number of more or less accurate representations both in wood and stone of these dreaded fish. Two that are in the Bishop Museum are shown in Fig. 93. It is curious that in the southern Polynesian islands representations of fish, or at least of fish as divinities, were extremely rare, and yet the harvest of the sea was quite as important to the southern people as to their brethren dwelling north of the equator.

A fabled lizard of great size was one of the "properties" of the Hawaiian folklore, and to this day dread of this dragon-like monster is rife among the people. While drawings of the *Moo* or lizard exist, I do not recall any carved figure of one. In bone we have figures of shells, and even rude skulls of enemies, but all these are small and belong to the chapter on Ornament. Far more important are the anthropomorphic figures still extant that show the sculptor's powers most fully. Wood was of course the most pliant material for the plastic work, but most of the idols of this material perished in the flames of the iconoclastic reformers of 1819. The few that survive in the museums of the world have been photographed for the chapter on Hawaiian Wor-

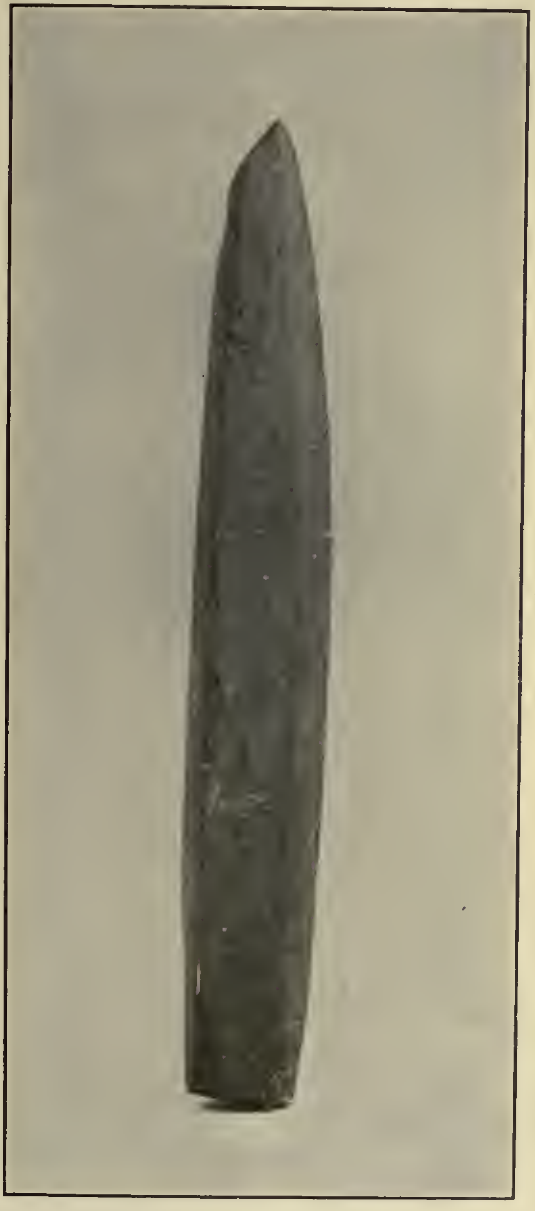

FIG. 91. STONE CHISEL

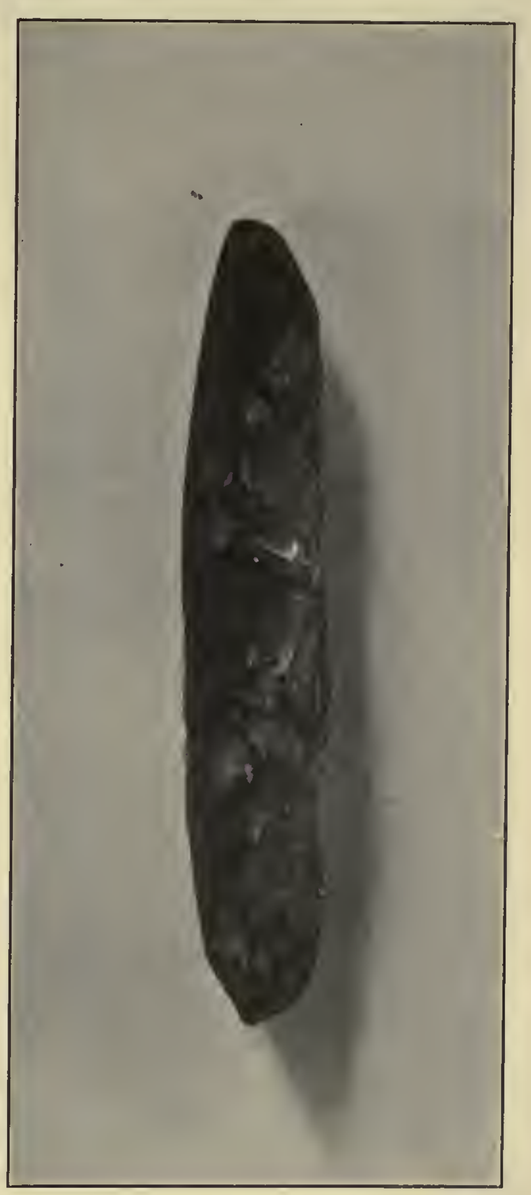

FIG. 92. STONE GOUGE.

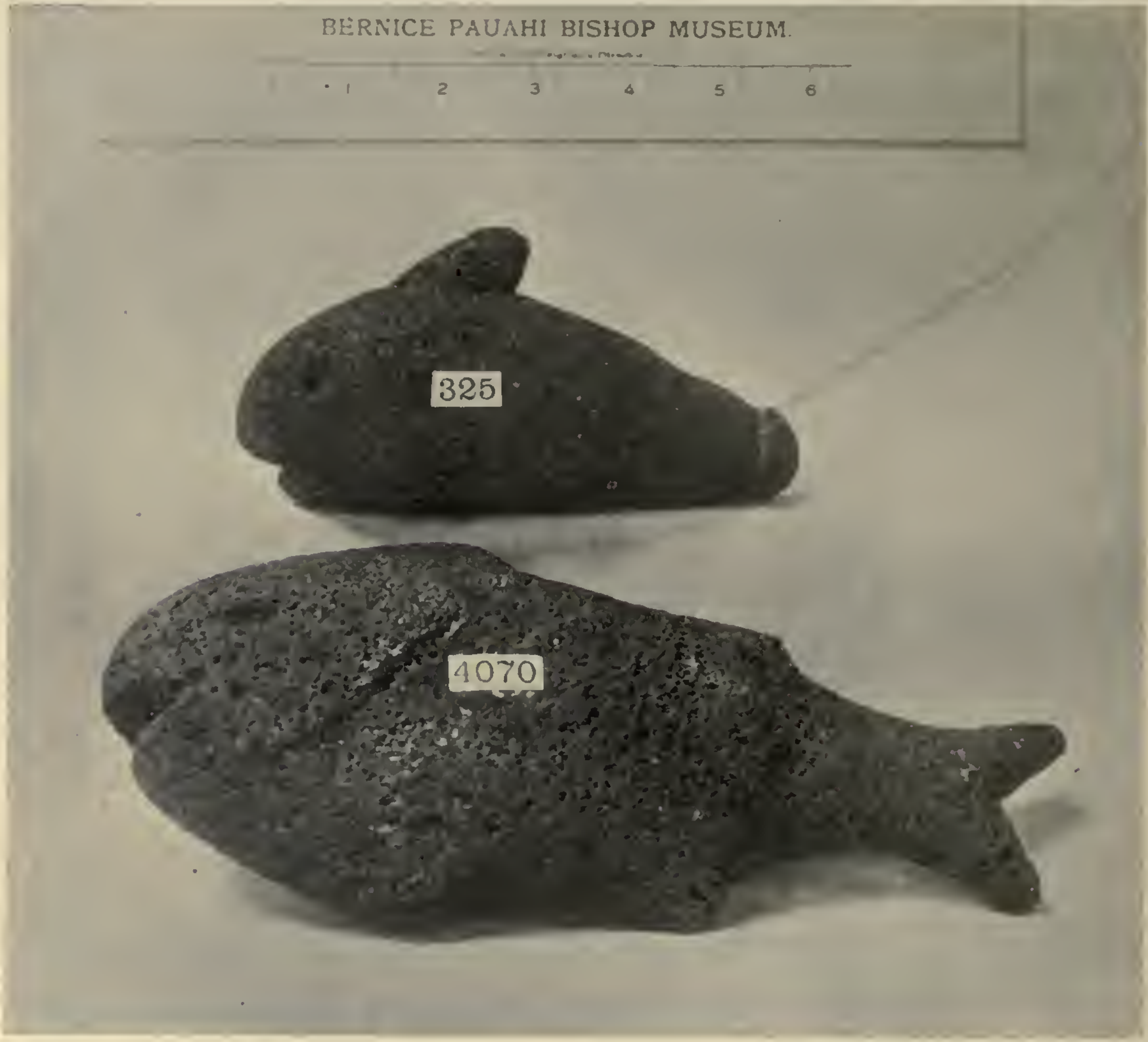

FIG. 93. STONE IMAGES OF FISH GODS.

ship; but the image makers used stone as well as wood, and of these some have survived, and a few may be here noticed as works of stone, although their religious significance will be treated more fully in another chapter. The oldest form as it appears to me is the unhewn stone with the face of a human being sketched rudely on one end. Even wooden idols have survived with no more shaping than this, and that the face or head was not always considered necessary we see by the sketches of Dr. William Ellis* and others, where a post rounded and decked with kapa makes a perfectly satisfactory god so far as appears. A capital type of this rude stone form is shown in Pl. LXIV., a stone of great weight which stood, when I first saw it (1864) at the gate of a gentleman's premises in Kahuku, Oahu. Even in its fallen state it had its votaries, and I have seen natives treat it with great respect, even making offerings of leaves. It was 50 inches high. After the death of the then owner and the absorption of the residence by a sugar plantation this image and its companion, which will presently be described, were taken to Frankfort-on-the-Main by a German resident of Honolulu. This gentleman afterwards died, and hearing that the images were lying uncared for in their late owner's courtyard, in 1896 while in Germany, I hoped to be able to restore them to their native country. I was three months too late, for on entering the great museum in Berlin I found they had recently secured a permanent resting place there. Dr. Bastian, however, kindly had casts made which are, by the courtesy of the German Government, now in the Bishop Museum, and from these I have made the illustrations, Pl. LXIV., and Fig. 94.

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* This was not the missionary of the same name often quoted in this chapter, but the assistant surgeon to both vessels during Cook's third voyage, and the author of a very good account of the voyage.

The other image is not an idol (in the popular sense) but a portrait bust, and it was first known to the white population of the islands when it stood in the valley of Manoa, near Honolulu. It is claimed that it was there before Cook's arrival at Kauai (1778). The ruff, wig and cue suggest a Spanish portrait of the time of the early Spanish discoverers. Whether it was an attempt on the part of a native sculptor to represent the white strangers, or whether some Spaniard of Juan de Gaetano's crew made it as a memorial of their visit, I cannot say. The workmanship is much the same as on other stone images undoubtedly Hawaiian, and the owner in 1864, who was a gentleman of education and especially versed in Hawaiian legendary lore, always believed that it was of Hawaiian workmanship and very ancient. The front and profile are shown in Fig. 94. The bust is 32 inches high. It is the only portrait I have seen, for the usual idols are not "likenesses of any form that is in Heaven above, or that is in the Earth beneath, or that is in the water under the earth".

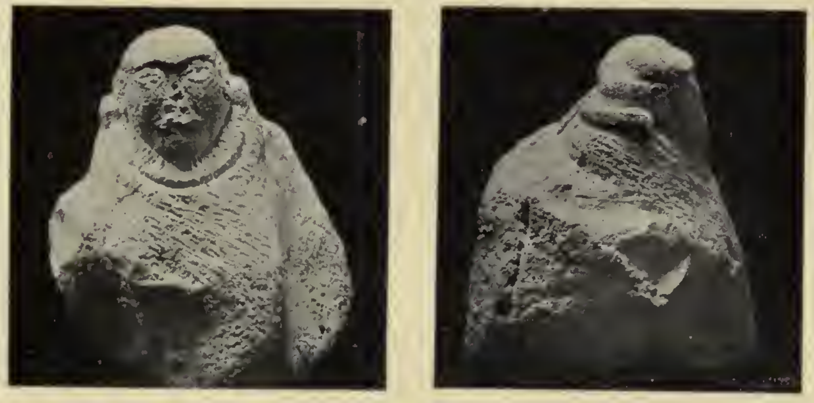

FIG. 94. IMAGE FROM MANOA VALLEY.

I have mentioned the images found on Necker island of the Hawaiian group in connection with the stone bowl (Fig. 53) found with them. They were all broken in pieces, but some of them have been repaired* and are shown in Pl. LXII. It will be seen that there are two distinct types, one made of cellular lava, and with a coarse treatment of arms and legs; the other of finer stone and more reasonable treatment. The heads in all of them spring from the breast without necks; they are large and and have enormous ears. The profile, Fig. 95, is of image No. 7447, Pl. LXII. We know nothing of what they were intended to represent. Several small objects have been put together in Fig. 96. No. 4488 is an implement of unknown use, perhaps a whetstone. The clinkstone of which it is made is very compact and metallic in appearance. No. 5312 is a small rudely made disk, of which other specimens are shown in Fig. 97. There is a slight concavity on each face, and a perforation in the middle to unite these depressions, and the natives usually call such stones *pohaku hu*, or a stone for a top. In Fig. 97, No. 4681 is doubtless such a stone, as it is round and suitable for fastening to a spindle, and No. 4682 in the same figure would also make a fair top; but the two irregular specimens, No. 5312 and No. 4683 (Fig. 97), could hardly serve that purpose. They have been used in modern times, and so far as I know, formerly as well, as part of a snare to catch birds. A loop of fine cord is passed through the central hole and covered with bait, while the snarer leads the cord to some cover near by. A pull at the right time may catch the leg of the bird in the loop and the weight of the stone prevents flight. No 7454 is a peculiar and well finished sinker for a squid or turtle hook. The Bishop Museum has lately acquired another specimen still attached to the spindle, explaining the use, before unknown to me. No. 4064 is a neatly made stone

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* The repairing consists solely in cementing together the ruptured parts. No additions have been made. Why, if the object was to destroy these images, they were simply broken and left on the ground it is difficult to understand, for it would have been easy to have thrown the fragments into the sea without moving from the spot where they were left.

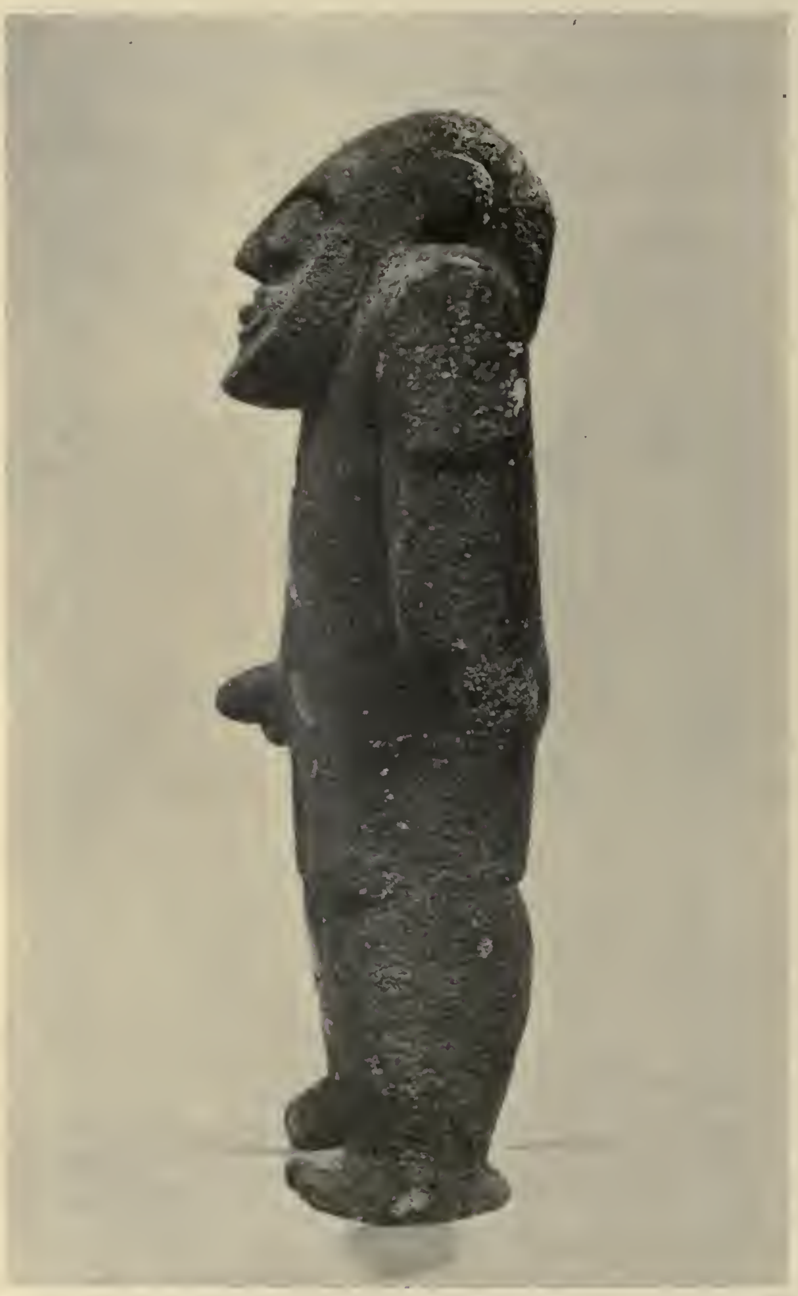
FIG. 95. NECKER ISLAND IMAGE.

helmet worn by a small idol. It is hollow and has a small hole in the rim, apparently to fasten it on with. But the idol could not be obtained at the time the helmet was purchased and now it has disappeared. I do not believe that the top was of considerable antiquity on these islands, although small ones made from a kukui nut are not uncommon among children's toys. The irregular stones could be and no doubt were used for net sinkers.

I have not described the stone structures of the old Hawaiians because they were of rough stone, dry laid, and consist of pyramidal and enclosed temples which will properly be considered with the Ancient Worship, and extensive walls enclosing fish preserves on the fringing coral reefs, which belong again to the Fisheries. In both these stone works it was the great labor expended in collecting, transporting and placing the stones rather than any architectural skill that made them noteworthy. In the case of the Kohala heiau it is claimed that fifteen thousand men formed a line and passed the stones more than seven miles over very hilly and uneven ground, never allowing the stones to touch the ground in their journey. From what I know of the old native character I can believe this statement.

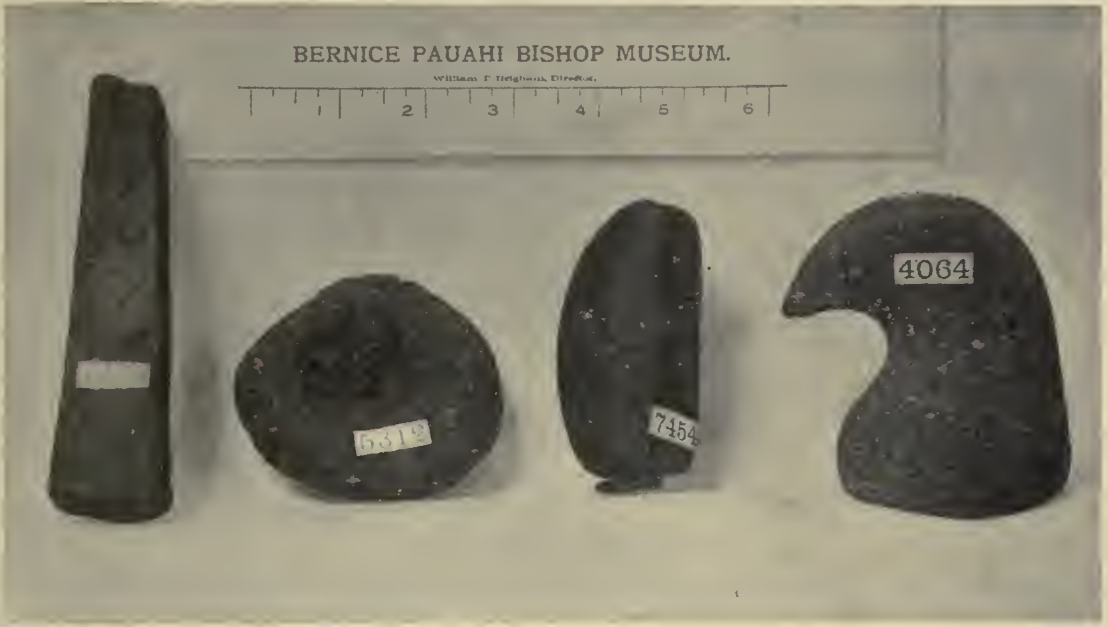

FIG. 96. MISCELLANEOUS STONE OBJECTS.

The stone walls of the heiau often tumbled down on Hawaii in the frequent earthquakes, but I do not know that they were ever made the objects of the victor's destroying wrath in the interminable petty wars, while the walls of the fish ponds were usually broken down to let out the fish and so materially injure the conquered owners.

In the remarkable temple of Umi on the desert plains of Hawaii, seven thousand feet above the sea, the huge pyramids of stone remain to this day as monuments of the devotion and industry of Chiefs, priests and the men of the districts of the island. On the other hand what the heathen conquerer spared the "civilized" white man has wantonly destroyed, for a heiau near Honolulu that in 1880 was in a most interesting condition has since been ground up in the rock-crusher to make roads, and no stone is left to mark the place!

Cut stones for building purposes were rare, and in all cases they were shaped from slabs of lava by patient hammering. One of the flat stones (No. 4899), formerly surrounding the altar in a small fishermen's heiau on top of a steep volcanic cone overlooking the sea at Kapoho, on the eastern coast of Hawaii, is in the Bishop Museum. Its dimensions are: length 48 in., width 26 in., and thickness 4.5 in. Some cut stones of a very different sort have been found at Kailua, on the same island, buried in the sands of the beach, of which the original intent remains in doubt. They are called the *pohaku kalae* (cut stones) of Umi, and are said to have been brought on double canoes from some unknown quarry along the coast probably now covered by some of the many lava flows of that region. One belonging to the Bishop Museum is 6 ft. long, 2 ft. wide, and 13 in. thick. Could they have been used for landing-stones or wharves for the royal canoes on that sandy beach? They were well cut, and of a size and weight difficult to handle by simple muscular strength.

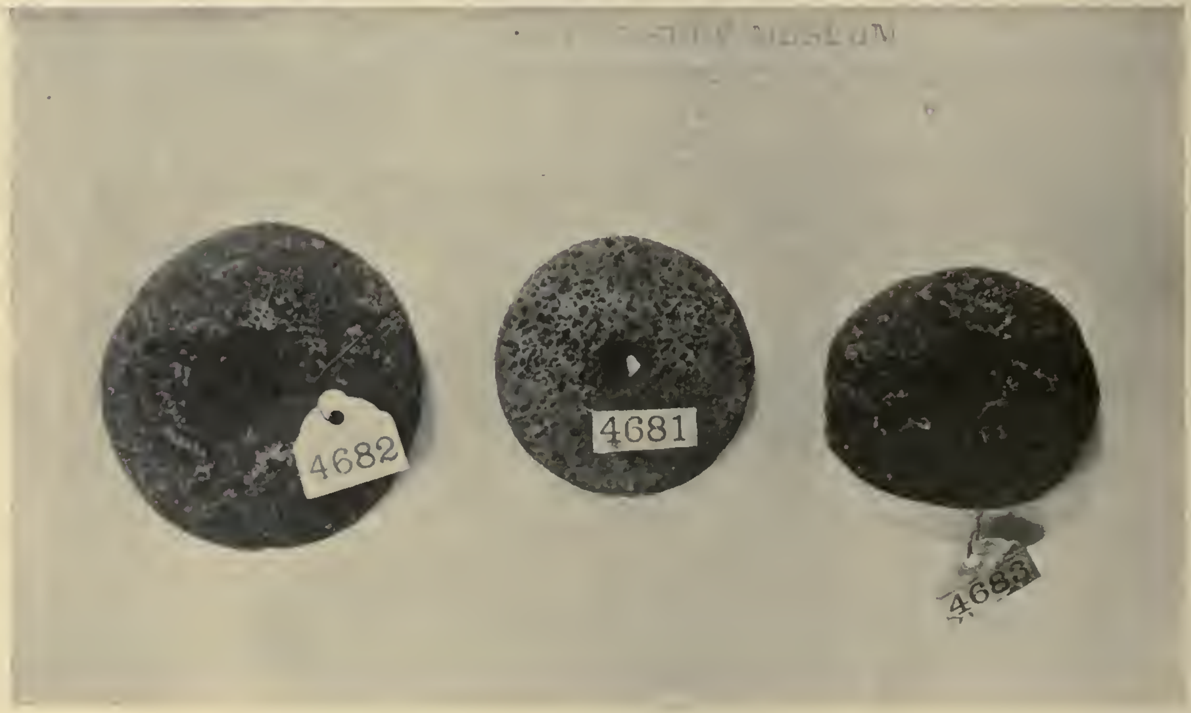

FIG. 97. TEETOTUM STONES.

Before closing this brief chapter on Hawaiian wrought stones I may mention the stones found in several places, known as bell-stones from their great resonance.

Of these the best example is on the road to Kaimuki district near Leahi, on Oahu. They are simply large stones supported on three or four smaller ones and their vibrations are excited by beating with small stones. I cannot find that the old Hawaiians made much of these stones. Another remarkable stone found also in the same region (and elsewhere) has one of its surfaces scored so deep and in so clear a manner by volcanic action as to suggest inscriptions, and images of runic staves or Etruscan stelæ arise in the imagination of the antiquary. They are Nature's handiwork, not man's, and to the same category must be assigned the stones here marked with comparatively large depressions, of distinct hemispherical form, often quite as definite as similar markings seen in Europe on stones forming part of prehistoric tombs: they are here only the remains of bubbles in the lava. Not infrequently has my attention been called to these as doubtless ancient games of the Hawaiians.

Genuine inscriptions, however, do exist on the Hawaiian islands, in caves, on exposed stones, and on lava flows where considerable flat surface is presented. Of these pictographs many have been collected, some photographed, and some cast, and they are now being studied with a view to future publication. They range from a simple glyph to record the important fact that the sculptor had completed the circuit of the island, Hawaii for example,—a feat as difficult in ancient days as a pilgrimage from Damascus to Mecca,—to curious conventionalized figures of men (or devils) and animals. Until these have received further study no question of their date or origin need be raised. They are found on all the principal islands from Kauai to Hawaii, and are of similar character throughout the group.

Any one who has had the patience to read this chapter through and to examine the many illustrations will be struck with the entire absence of surface decoration. Not a fret nor a guilloche, not even lines or dots are used on the surface of stone dishes or implements to relieve the primitive roughness! Even the stone images (except the Manoa bust, which shows foreign influence) are devoid of the slight ornament of clothing, and if their stone work alone survived, the ancient Hawaiians would not have any standing among decorative tribes. The Papuans and Melanesians, so much their inferiors physically and mentally, would rank far above them in ornamentation. We must have patience until the patterns of their kapa can be shown, and the decoration of their gourd vessels, when it will, I think, be shown that they appreciated decoration if they were not adepts in the higher forms. In the beauty of pure form as shown in their feather helmets and in the best of their ancient *umeke* they yield to none. Perhaps if they had made pottery in place of working intractable stone the result might have been different. The wonderfully decorative carving (on wood) of the Maori and the Mangaian, both of the same family with the Hawaiian, show what the Polynesian can do when his faculties are turned in that direction.

We are able to see how in the possible twelve centuries that the Hawaiians have been on this group they utilized the stone for their daily needs, until at last the stranger from distant lands brought metals, pottery, and the loom, supplanting the rude tools and their imperfect products, until only the whetstones and poi pounders retain their place in the native armamentarium. How few the stone implements retained by the most civilized peoples! The mechanic uses his grindstone and whetstone, the latter not very different from the most primitive form, and the chemist clings to his agate mortar, as the cobbler to his lapstone, but little else is left; even the millstones are yielding place to hardened steel rollers for the comminution of cereals. With all this change, improvement doubtless, the stone implements of a people without a written history are the remaining link to connect us with their past.

> "O there are voices of the Past,
> Links of a broken chain,
> Wings that can bear me back to Times
> Which cannot come again:
> Yet God forbid that I should lose
> The echoes that remain!"

Ordered printed November 8, 1901.

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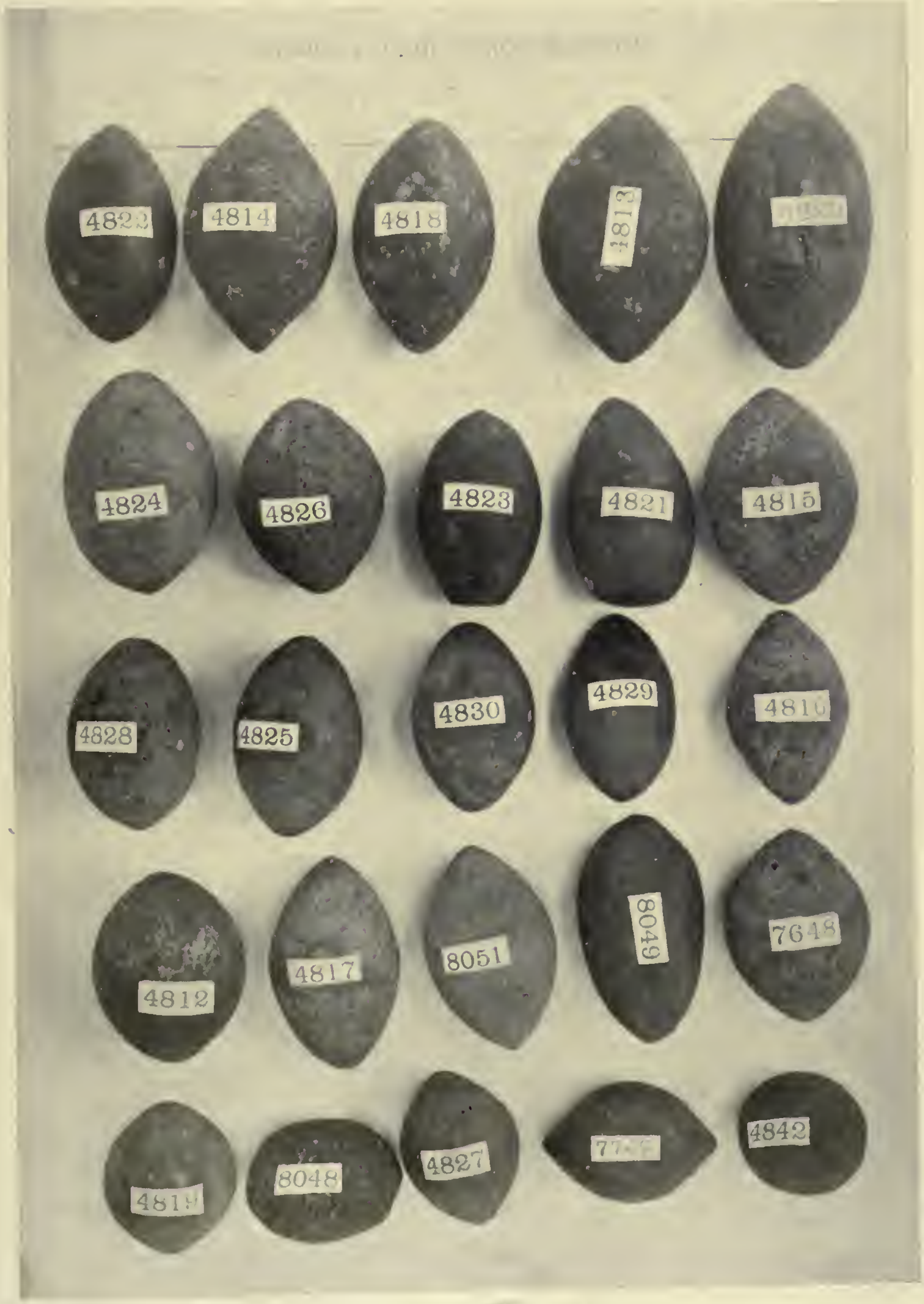
PLATES.

PLATE XXXI.

HAWAIIAN SLINGSTONES.

4822.	Compact brown lava.
4814.	Brown lava.
4818.	Smooth finish.
4813.	Compact lava.
4820.	Pecking marks very plain.
4824.	Grey, clay-like.
4826.	Red, porous lava.
4823.	Clay with the end ground off.
4821.	Clay like last.
4815.	Rolled lava.
4828.	Very cellular lava.
4825.	Clay-like.
4830.	Cellular lava.
4829.	Smooth, flattened on side near one end.
4816.	Rough, red, rolled.
4812.	Brown, smooth lava.
4817.	Grey, flat on one side.
8051	Ground but not polished.
8049.	Very irregular.
7648.	Rough, tufa-like.
4819.	Lava.
8048.	Black cellular lava.
4827.	Lava.
7749.	Flattened.
4842.	Round, rough; perhaps a Noa stone.



HAWAIIAN SLINGSTONES (MAA).

Plates XXXI – LXV to follow page 436 =

PLATE XXXII.

Hawaiian Polishing Stones.

7937. Pohaku oio; flat face and conical back; 4.2 lbs.

3013. Polishing stone of ordinary shape and texture.

3001. Pohaku oio for polishing canoe or umeke. Maui.

3010. Pohaku oio anai. Fine polishing stone.

3026. Of the same character as the last.

3022. Pohaku oio anai.

3002. Pohaku oio anai.

3009. Pohaku pahoa oio anai umeke laau. For polishing umeke.

3065. Oahi. Baked pumice from the beach of Niihau. Obtained in 1885.

3062. Puna. Smooth white coral.

3068. Pohaku oio anai.

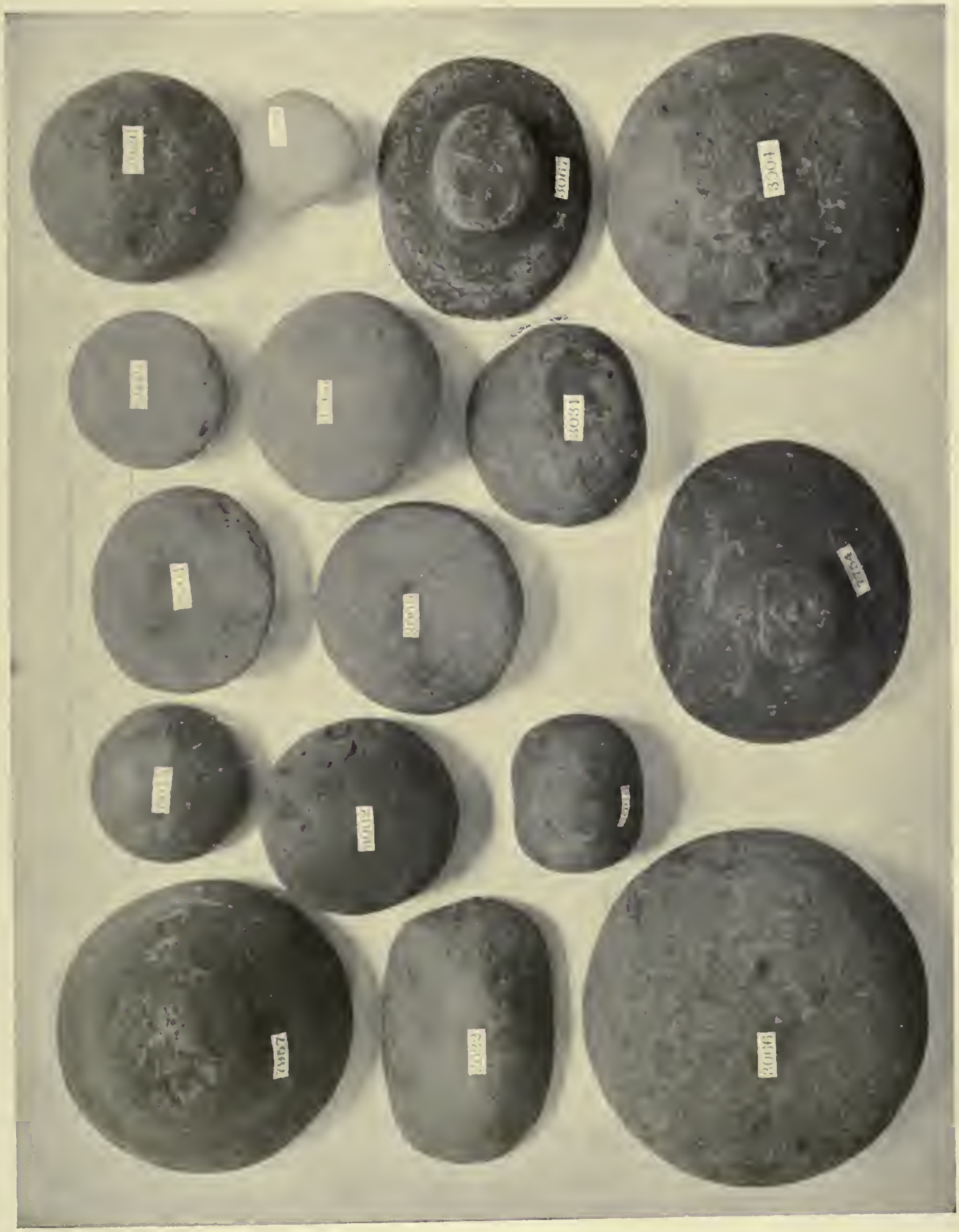
3031. Pohaku oio anai.

3067. Pohaku oio anai with knob; elliptical outline.

3066. Pohaku oio anai from Kailua, Hawaii.

7754. Polisher with flat face, conical back with knob, 3.5 lbs.

3004. Pohaku pahee anai ipu laau. Kailua, Hawaii.



HAWAIIAN POLISHING STONES.

PLATE XXXIII.

Hawaiian Polishing Stones.

3049. Rough, cellular, fresh lava rasp.

3044. Rough lava rasp.

3025. Truncated cone smooth polisher.

3029. Cellular lava of uniform texture, back rounded.

3030. Smooth calcareous conglomerate.

3045. Fine coral sandstone.

3024. Fine grain with occasional cells; canoe polisher.

3016. Cellular light colored stone.

3003. Hemispherical, smooth.

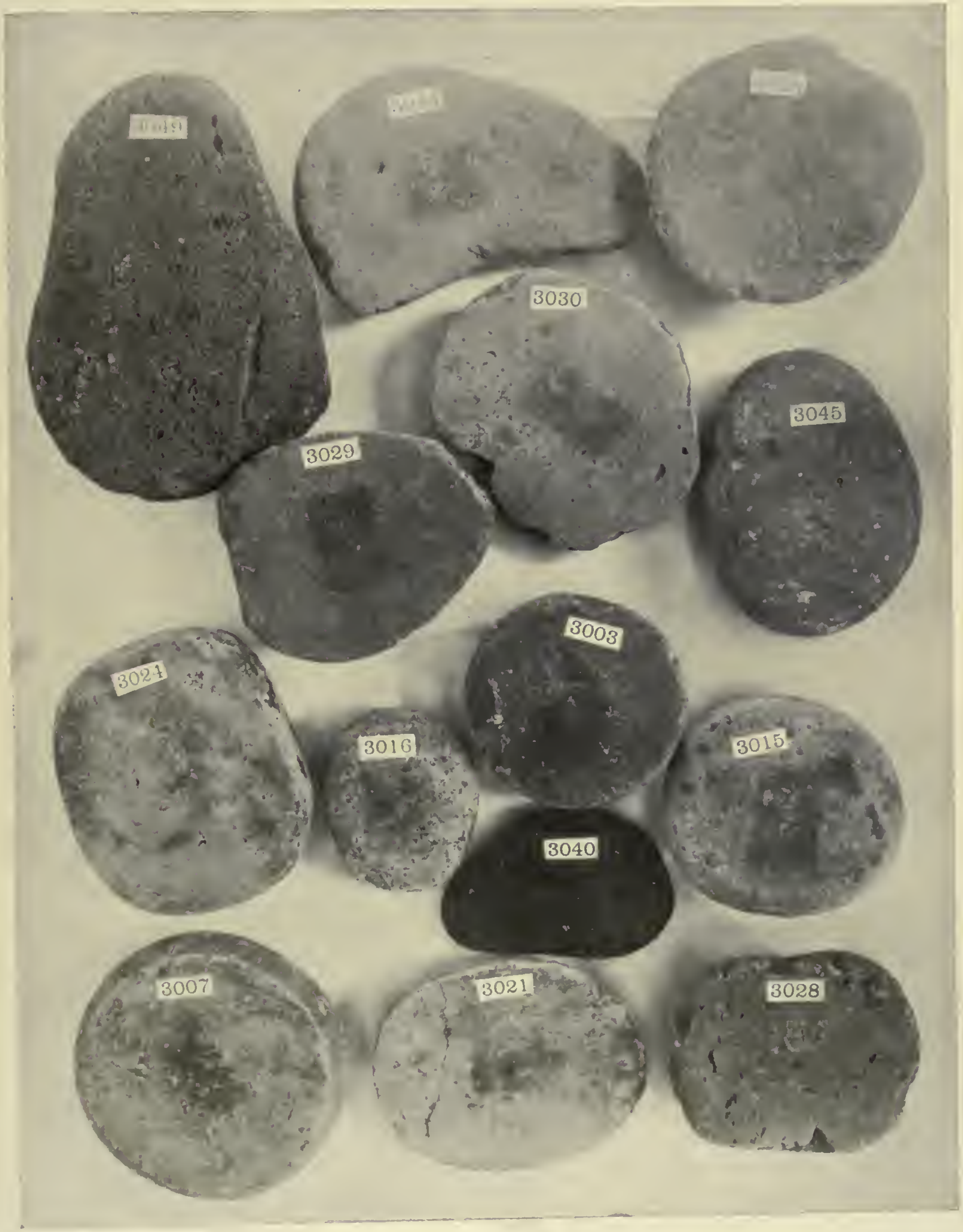
3040. Black rough lava crust. Much used for rough work.

3015. Rude canoe polisher.

3007. Lenticular mass, one side worn flat.

3021. Smooth, well worn polisher for canoes or umeke.

3028. Stone with large, irregular cells like rotten stone.

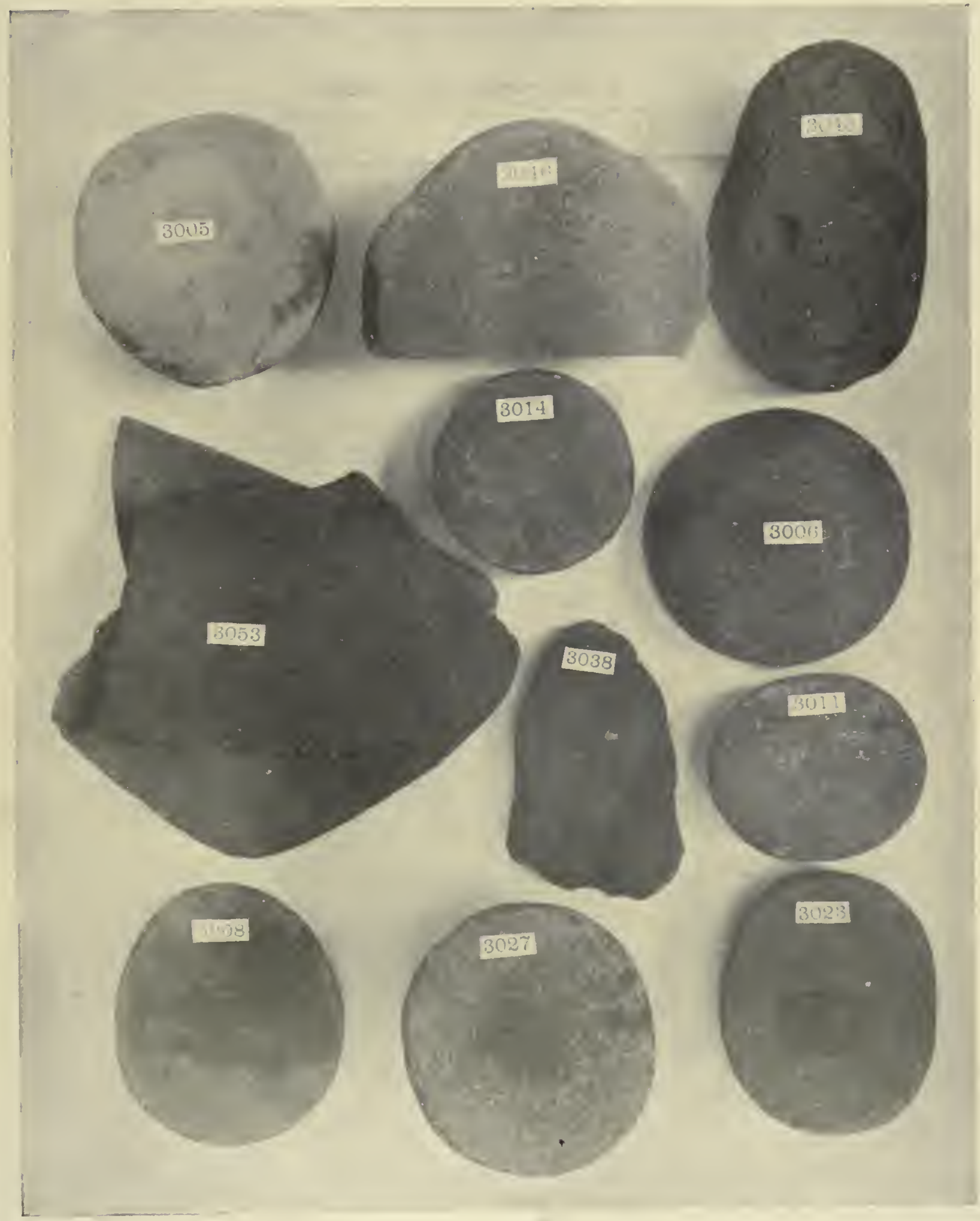


HAWAIIAN POLISHING STONES.

PLATE XXXIV.

HAWAIIAN POLISHING STONES.

3005. Fine-grained hemispherical polisher.
3046. Pumice with two used surfaces at right angles to each other.
3043. Rough porous lava.
3053. Pieces of black cellular lava crust.
3014. Smooth calcareous polisher.
3006. Smooth hemispherical polisher.
3038. Very hard and smooth lava for whetstone.
3011. Half of a prolate spheroid, smooth grain.
3008. Flat surface, rounded back, rough grain.
3027. Hemispherical, cellular canoe polisher.
3023. Close-grained, rounded back polisher for canoes.



HAWAIIAN POLISHING STONES.

PLATE XXXV.

Hawaiian Polishing Stones.

3018. Calcareous conglomerate, hemispherical form.

3012. Hemispherical, compact.

3017. Lava, round on back, nearly flat on face.

3047. Pumice with marks of use on four sides.

3032. Lava with crystals of augite; truncated cone.

3041. Rude, shapeless piece of lava.

3033. Curious cellular fragment resembling burstone.

3051. Fragment of coral softer than pumice.

3035. Pumice nearly worn out.

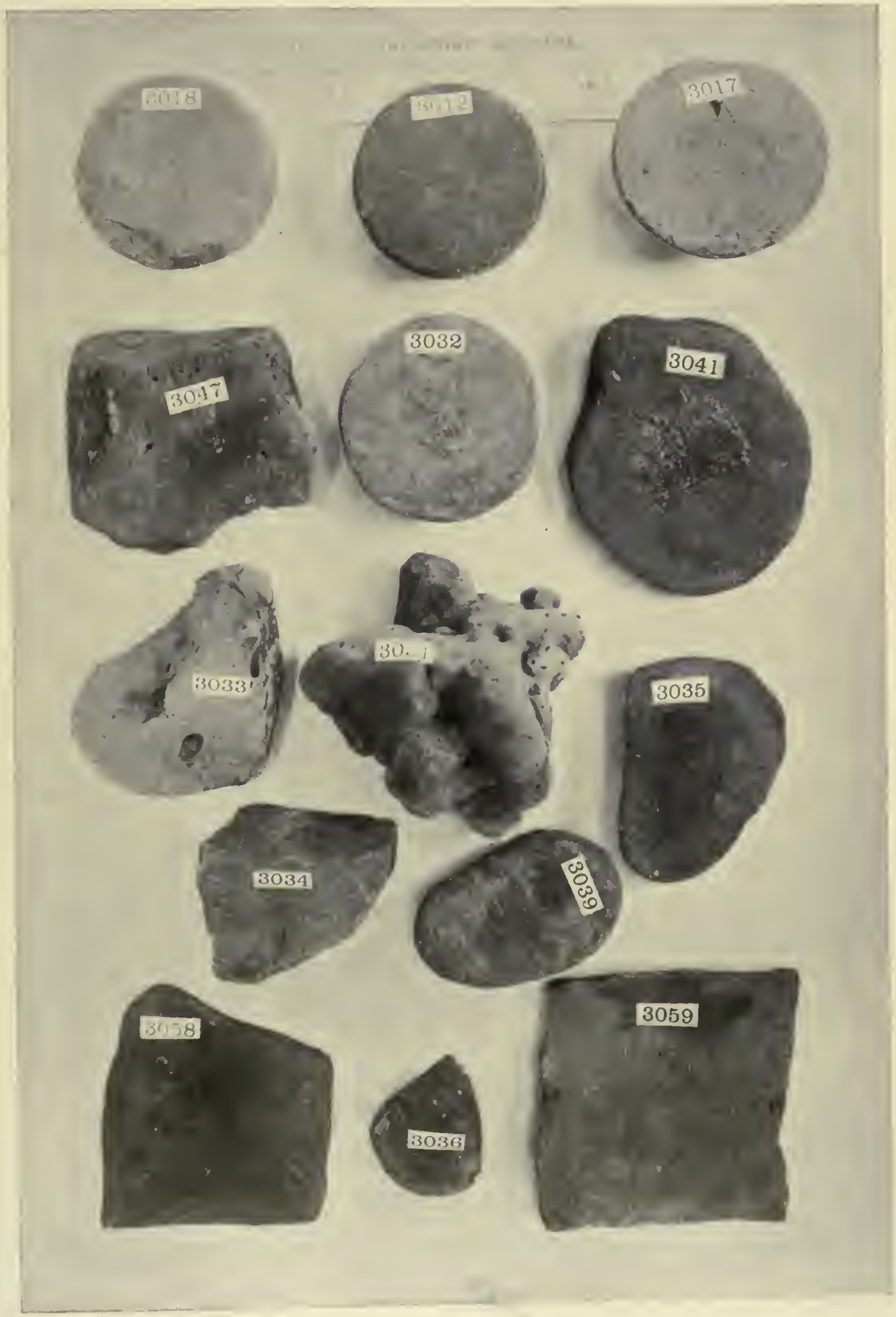
3034. A very composite stone full of minute crystals.

3039. Coral of considerable solidity.

3058. Plate of lava crust.

3036. Pumice for rounding the insides of umekes.

3059. Thin, tile-like fragment of compact lava smooth on both sides.



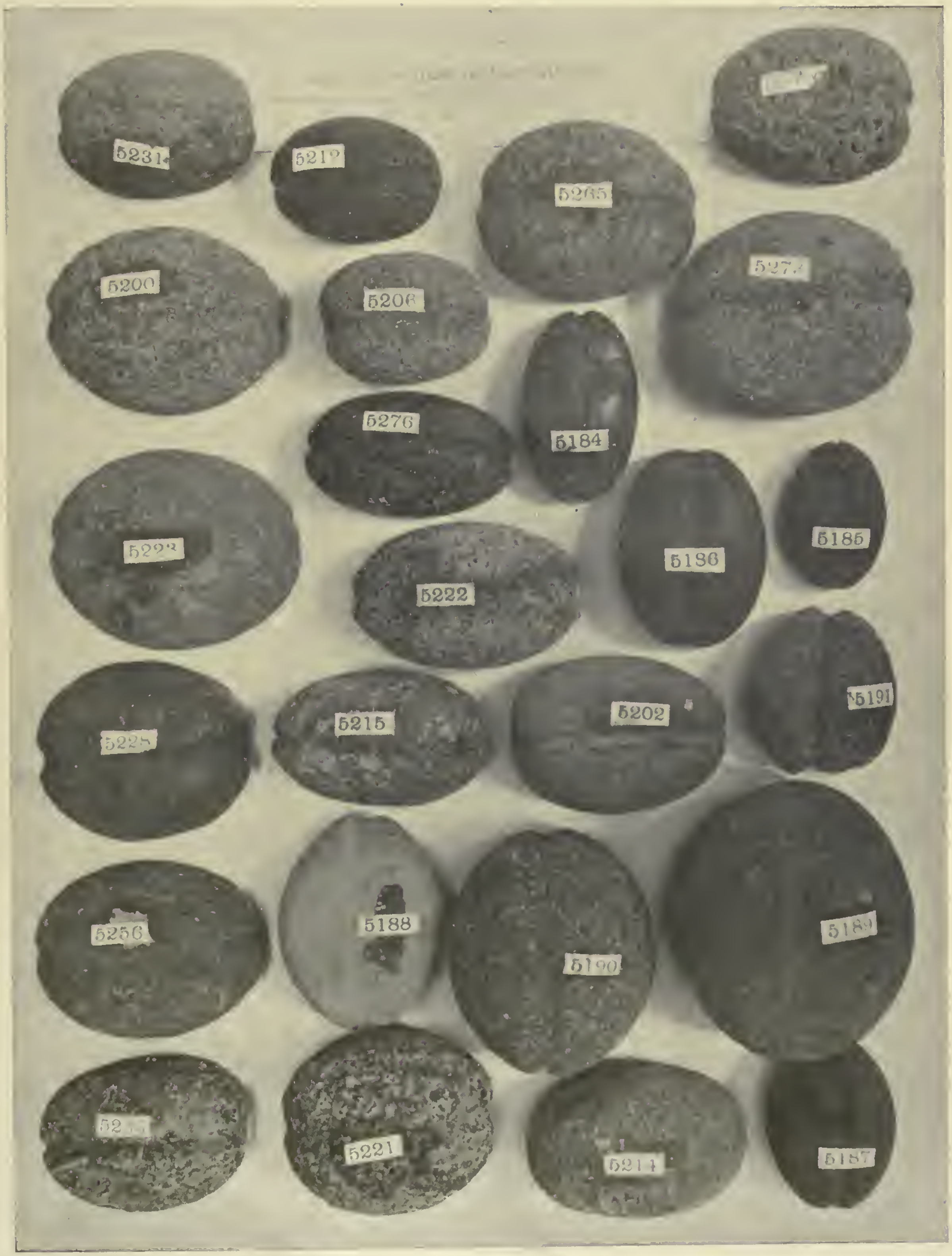
HAWAIIAN POLISHING STONES.

PLATE XXXVI.

Hawaiian Squid-hook Sinkers.

I cannot vouch for the identification of all the specimens. They are often foreign stones taken from the ballast of some vessel, and there is no petrological collection for comparison within two thousand miles.

5231.	Coral sand rock.
5212.	Hematite.
5265.	Crystalline granitoid rock.
5240.	Crystals of pyroxene in lime.
5200.	Augite crystals in white matrix.
5206.	Coral sand rock.
5184.	Hematite.
5273.	Coral sandstone.
5223.	Augite, olivine, quartz, etc.
5276.	Hematite.
5222.	Granite from Hongkong(?).
5186.	Hematite and olivine.
5185.	Hematite.
5228.	Yellow ochre.
5215.	Coral conglomerate.
5202.	Coral conglomerate.
5191.	Coarse coral sand rock.
5256.	Granitoid stained with iron.
5188.	Fine white coral sand rock.
5190.	White crystals in dark green matrix.
5189.	Augite, olivine, etc.
5233.	Coral conglomerate.
5221.	Granite from Hongkong(?).
5214.	Coral conglomerate.
5187.	Hematite.



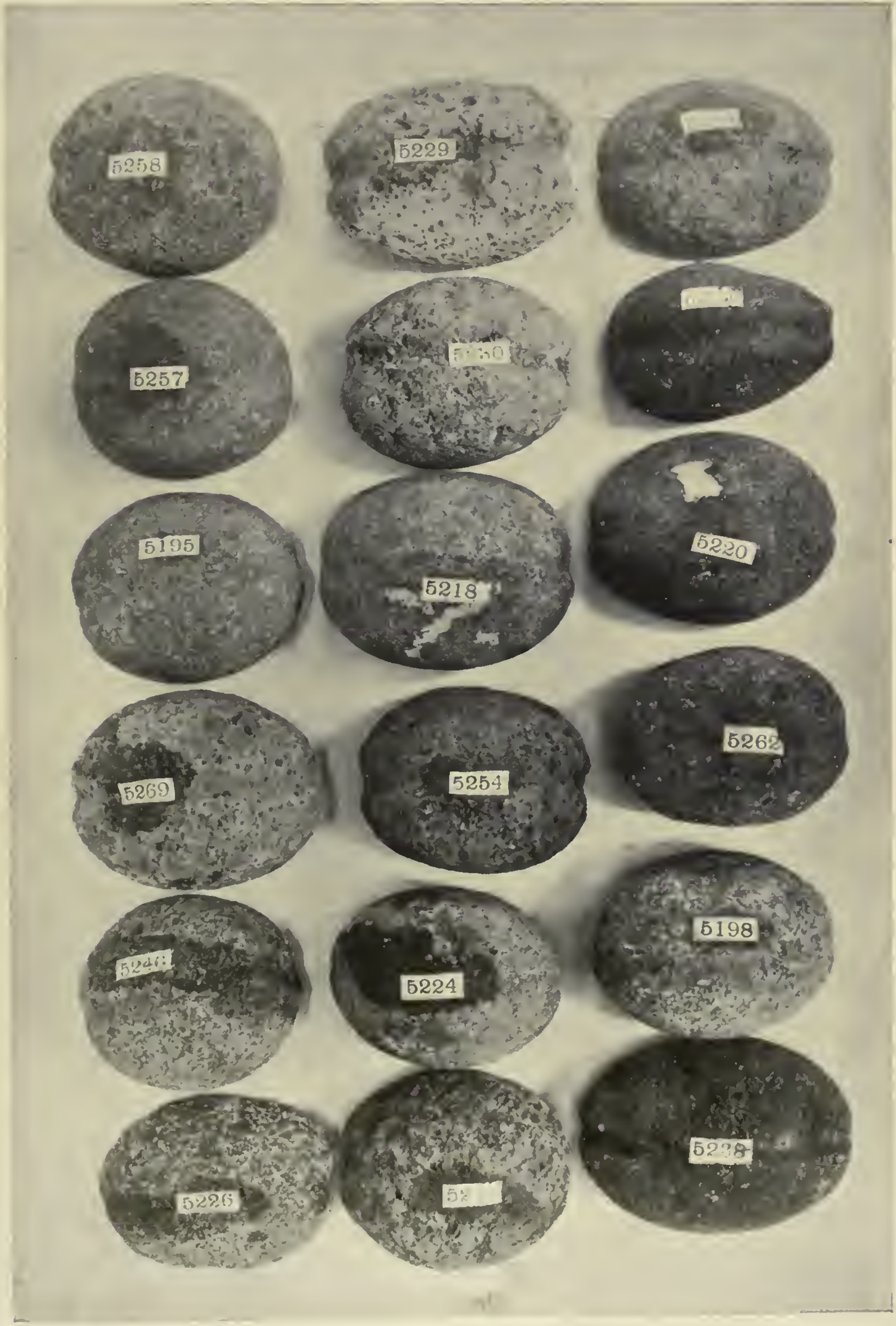
HAWAIIAN SQUID-HOOK SINKERS.

PLATE XXXVII.

HAWAIIAN SQUID-HOOK SINKERS.

5258. Volcanic nodule.
5229. Coarse coral rock.
5264. Dark crystals in white matrix.
5257. Same as last specimen.
5230. Coral rock.
5241. Decomposing crystals, red matrix.
5195. Volcanic nodule.
5218. Rose granite.
5220. Volcanic nodule.
5269. Coarse metamorphic rock.
5254. Olivine lava.
5262. Reddish crystalline rock.
5246. Granitoid rock.
5224. Granitoid rock.
5198. Dark crystals in white matrix, heavy.
5226. Olivine almost entirely.
5245. Dark crystals in white matrix.
5238. Volcanic olivine, pyrite, etc.

By the term volcanic nodule I mean certain masses of undetermined composition extruded from the slowly moving lava flows. They are often hematite, olivine, ochre or a mixture of these and augite, and are often several inches in diameter.

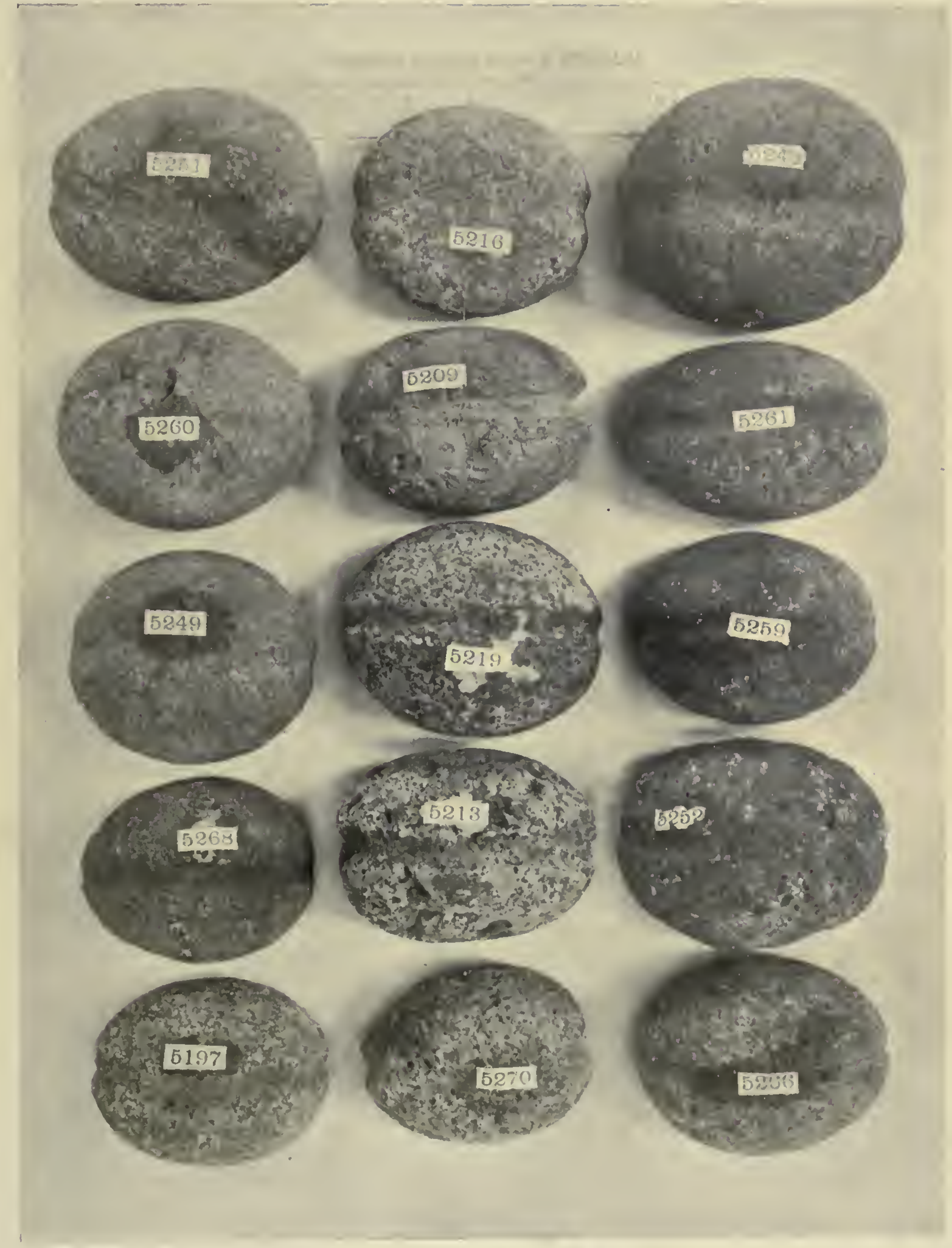


Hawaiian Squid-hook Sinkers.

PLATE XXXVIII.

HAWAIIAN SQUID-HOOK SINKERS.

5251. Volcanic nodule.
5216. Dark crystals (? hornblende) in white matrix.
5248. Volcanic nodule.
5260. Volcanic nodule.
5209. Coral sandstone.
5261. Granitoid rock.
5249. Volcanic nodule.
5219. Granite, from Hongkong.
5259. Crystalline stone.
5268. Containing much olivine.
5213. Coarse coral rock.
5252. Reddish lava.
5197. Rose granite.
5270. Coarse granite.
5266. Crystalline stone.

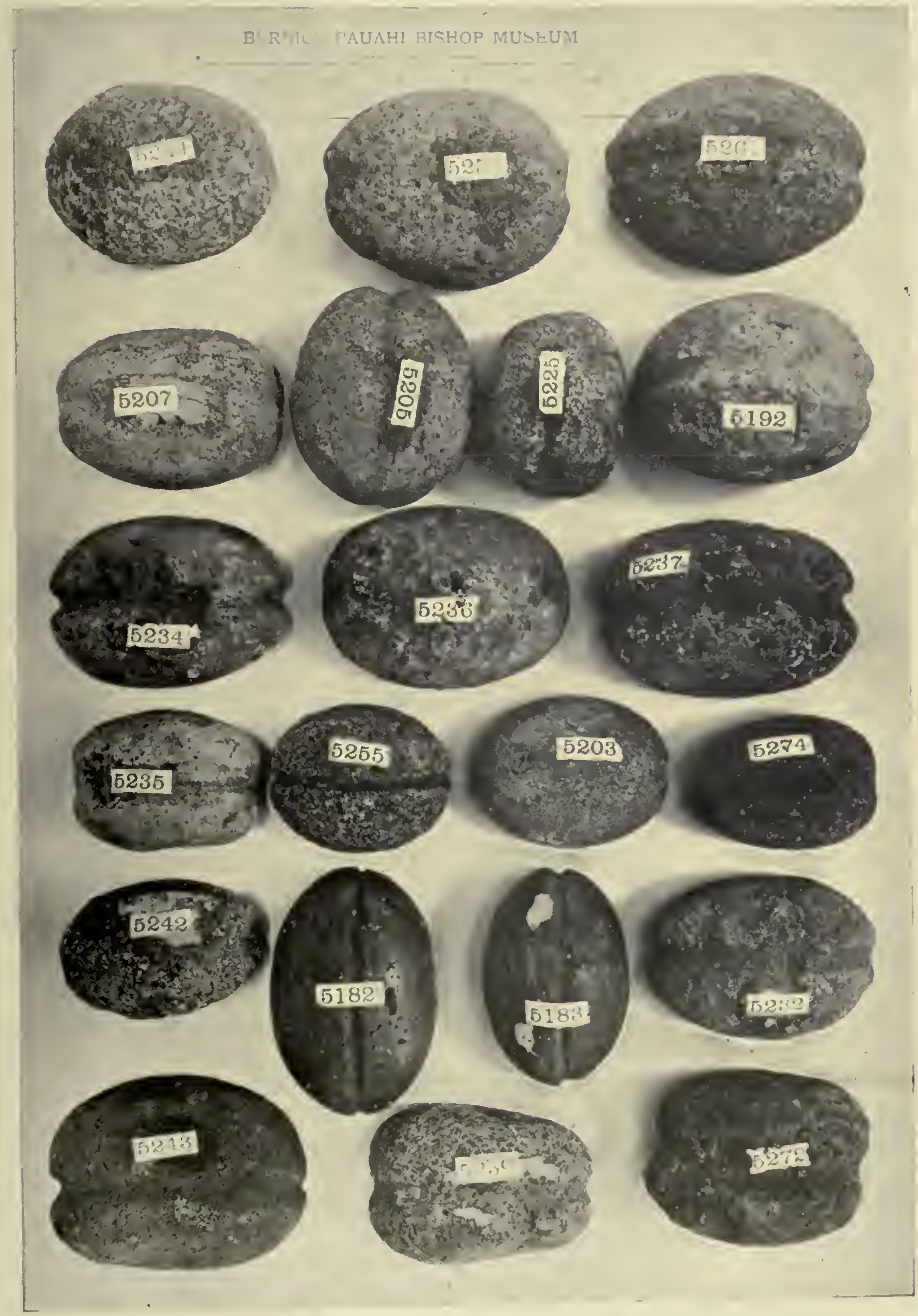


HAWAIIAN SQUID-HOOK SINKERS.

PLATE XXXIX.

Hawaiian Squid-hook Sinkers.

5244. Dark crystals in white matrix.
5253. Volcanic nodule; olivine, augite, etc.
5267. Volcanic nodule.
5207. Coral rock.
5205. Semifossil coral.
5225. Dark crystals in white matrix.
5192. Coral rock.
5234. Coral conglomerate.
5236. Coral, baked.
5237. Coarse coral rock.
5235. Coral, baked.
5255. Olivine lava.
5203. Coral rock.
5274. Volcanic augite crystals, some olivine, heavy.
5242. Shell and sand conglomerate.
5182. Hematite.
5183. Hematite.
5232. Coral rock.
5243. Cellular lava.
5239. Tufaceous stone.
5272. Lava containing much iron.



HAWAIIAN SQUID-HOOK SINKERS.

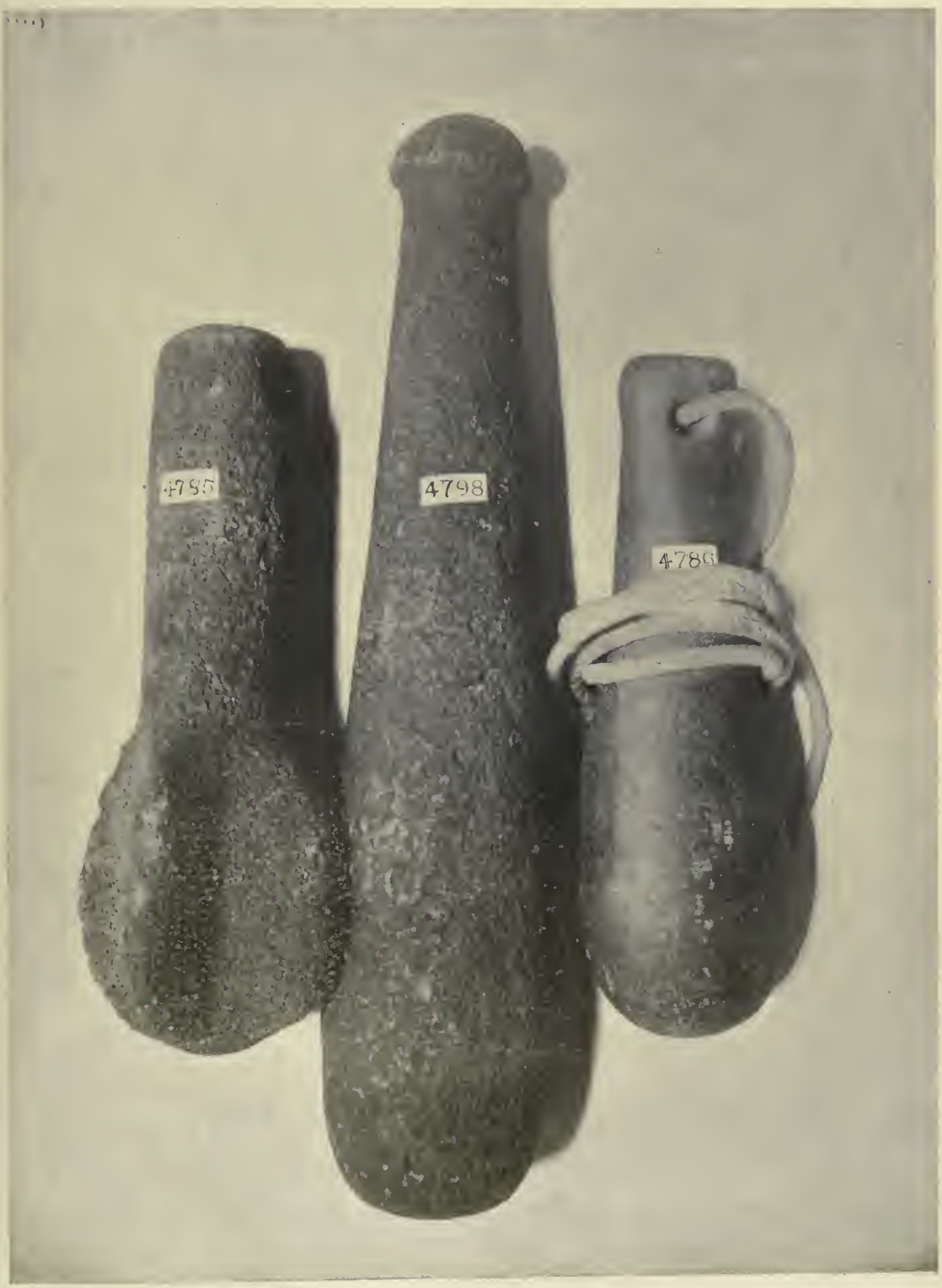
PLATE XL.

Hawaiian Stone Clubs.

4785. Cellular lava with four wings and a hole drilled in handle; 9.5 in. long, weighs 3 lbs. 3.5 oz.

4798. Cellular lava, pestle-like; 14.7 in. long, weighs 6 lbs. 6 oz.

4786. Compact lava, well-drilled hole in handle; 9 in. long, blade 3×2.2 in., weighs 2 lbs. 14.5 oz.



HAWAIIAN STONE CLUBS.

PLATE XLI.

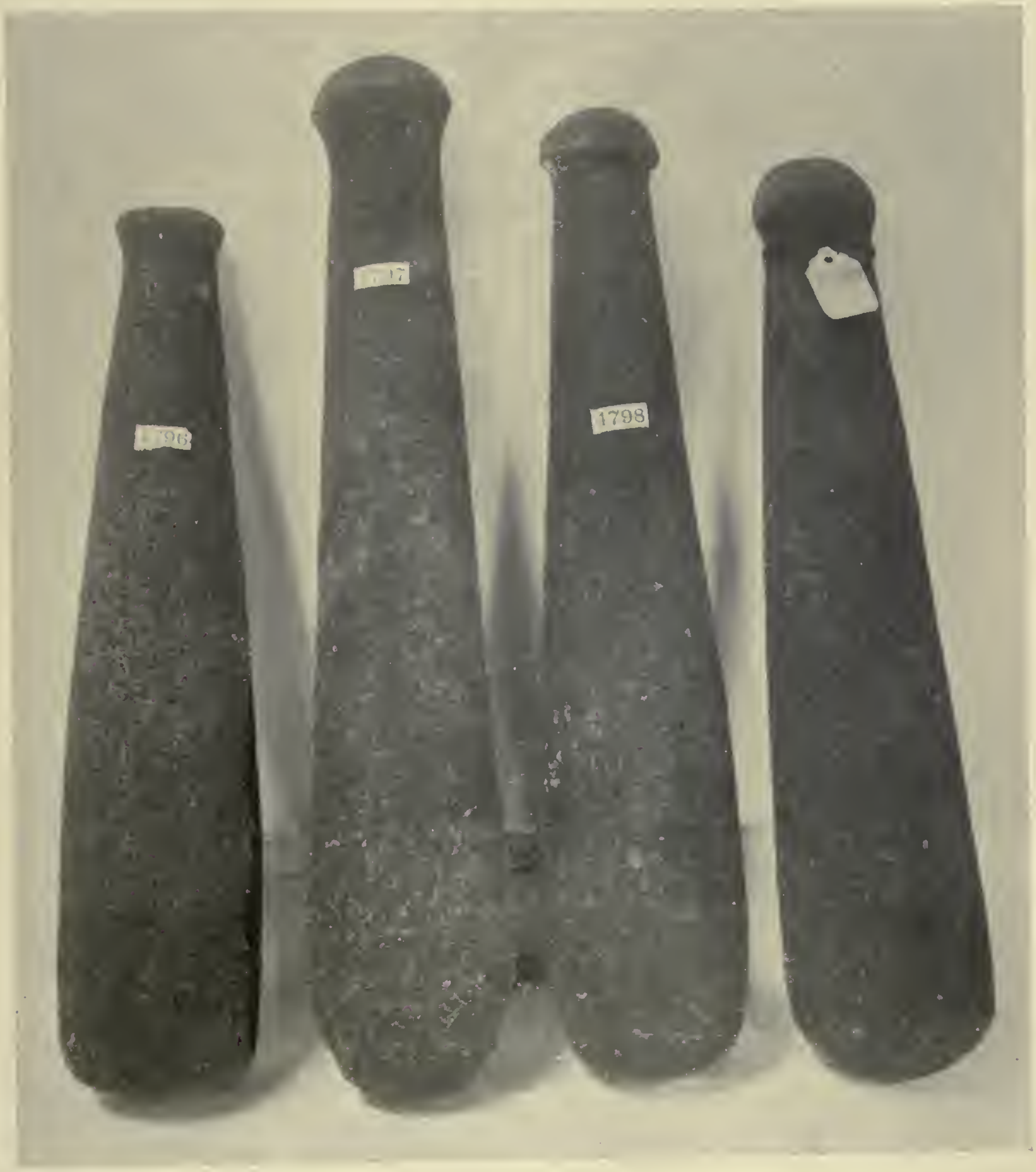
Hawaiian Pestles.

4796. Cellular lava; 13.2 in. long; weighs 4 lbs. 2 oz.

4797. Cellular lava; 15.8 in. long; weighs 6 lbs. 9 oz.

4798. Cellular lava; 14.7 in. long; weighs 6 lbs. 6 oz.

5148. Cellular lava; 13.8 in. long; weighs 4 lbs. 5 oz.



HAWAIIAN STONE PESTLES.

PLATE XLII.

STONE PESTLES.

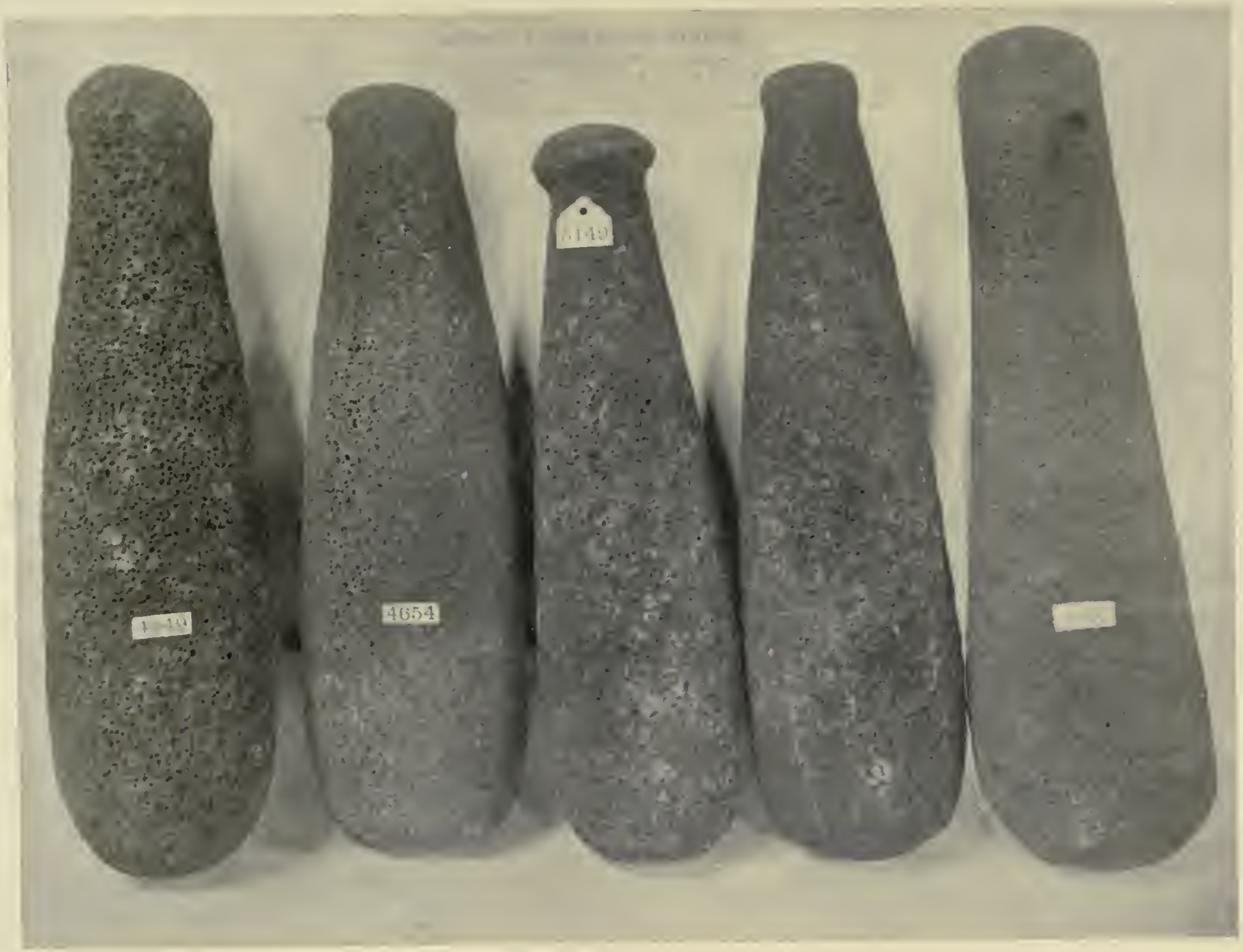
4649. Cellular lava; 13 in. long; weighs 5 lbs. 3 oz.

4654. Cellular lava; 12.5 in. long; weighs 6 lbs. 8 oz.

5149. Cellular lava; 11.7 in. long; weighs 5 lbs. 2 oz.

4647. Cellular lava; 12.7 in. long; weighs 6 lbs.

4650. Cellular lava; 13.4 in. long; weighs 6 lbs. 4 oz.



HAWAIIAN STONE PESTLES.

PLATE XLIII.

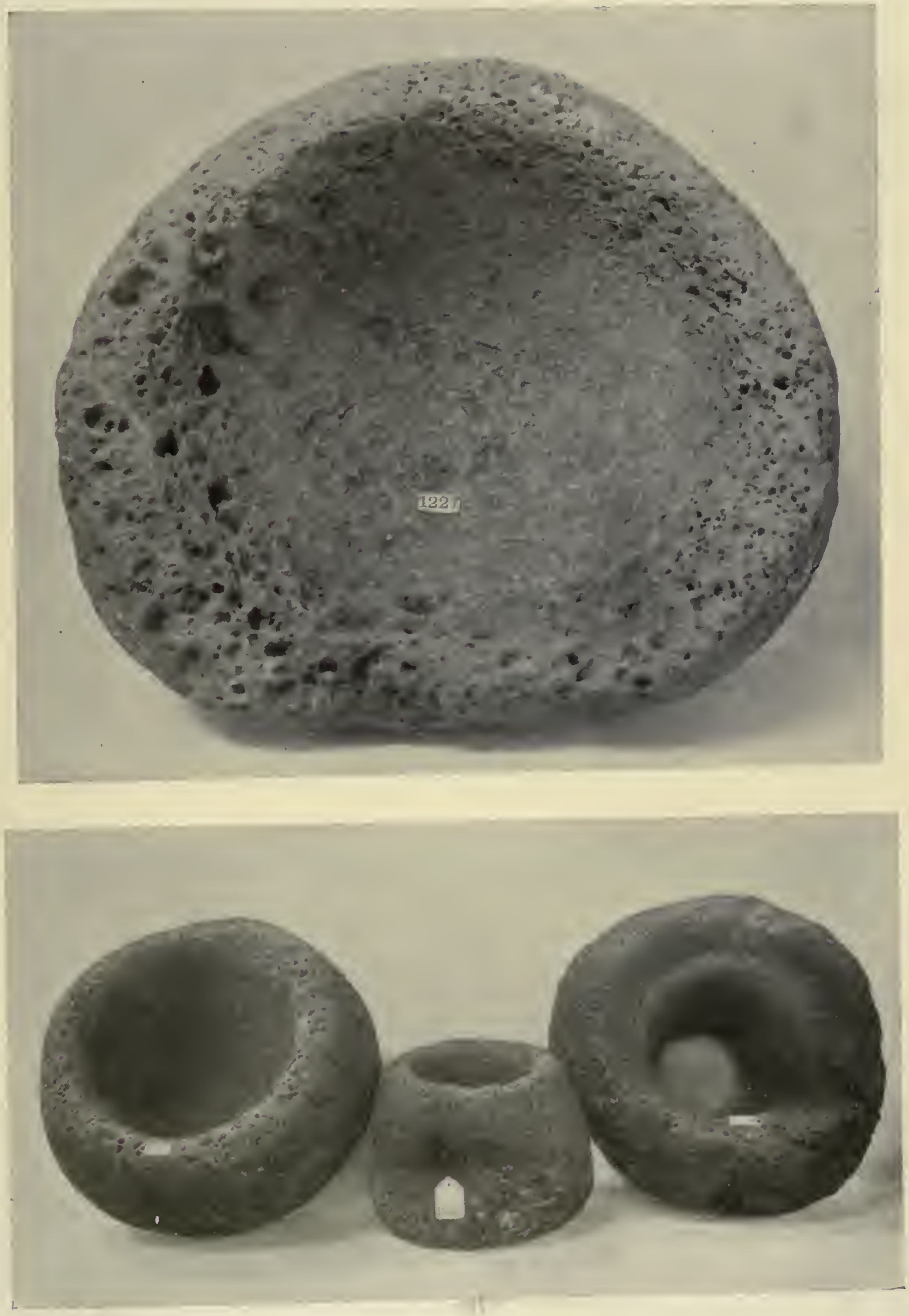
HAWAIIAN STONE MORTARS.

1227. Used for grinding awa; 15.5×13.5 in. in diameter.

1220. A large cup; 11×10.5 in. in diameter.

1225. Transition form to the high mortars of Kauai; 7 in. in diameter.

4078. From Nihoa; bottom worn out. From Queen Liliuokalani. 11.5×11 in. in diameter.

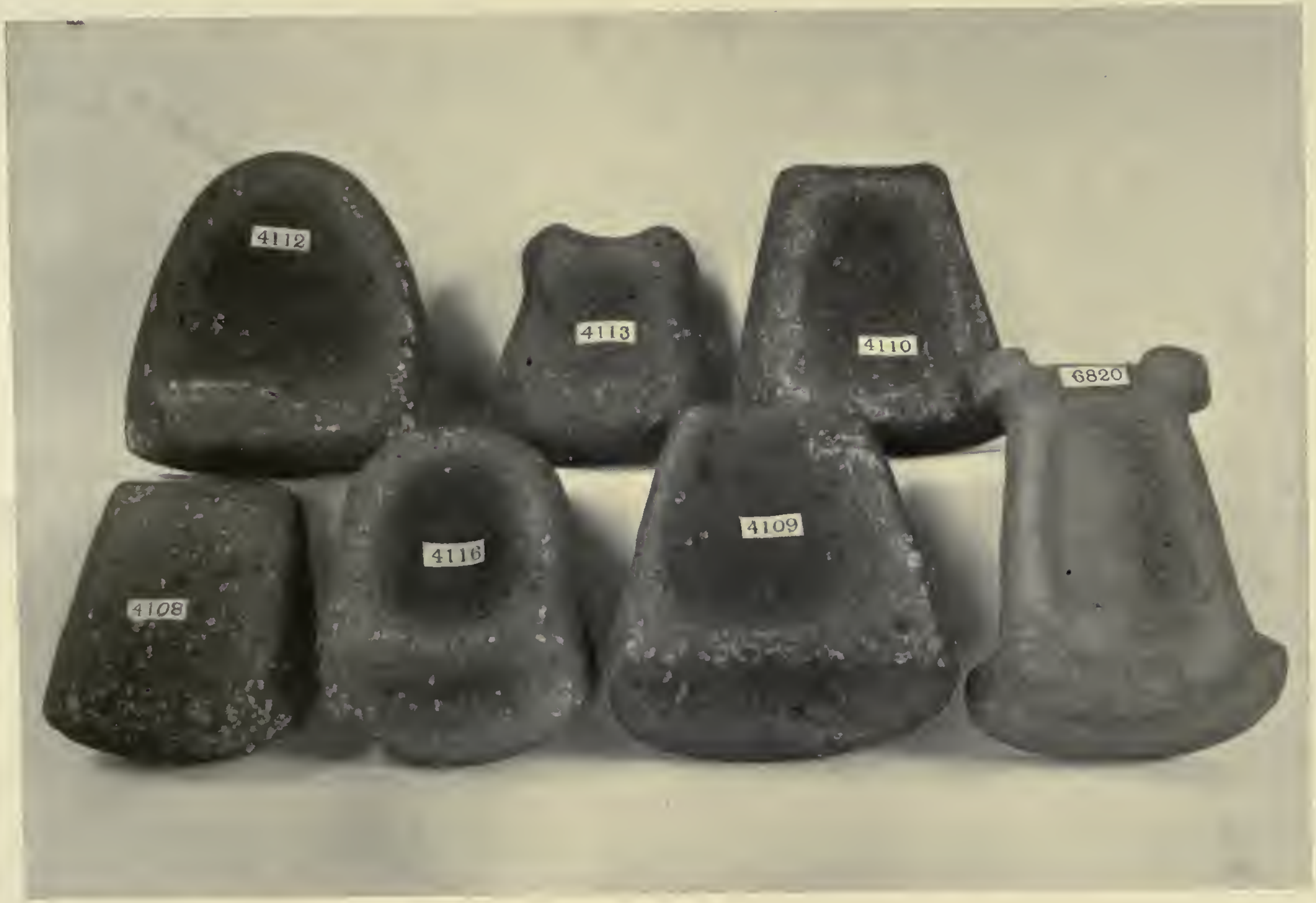


HAWAIIAN STONE MORTARS.

PLATE XLIV.

STIRRUP-LIKE POI POUNDERS FROM KAUAI.

6820. A cast from the original in the Peabody Museum at Harvard University.

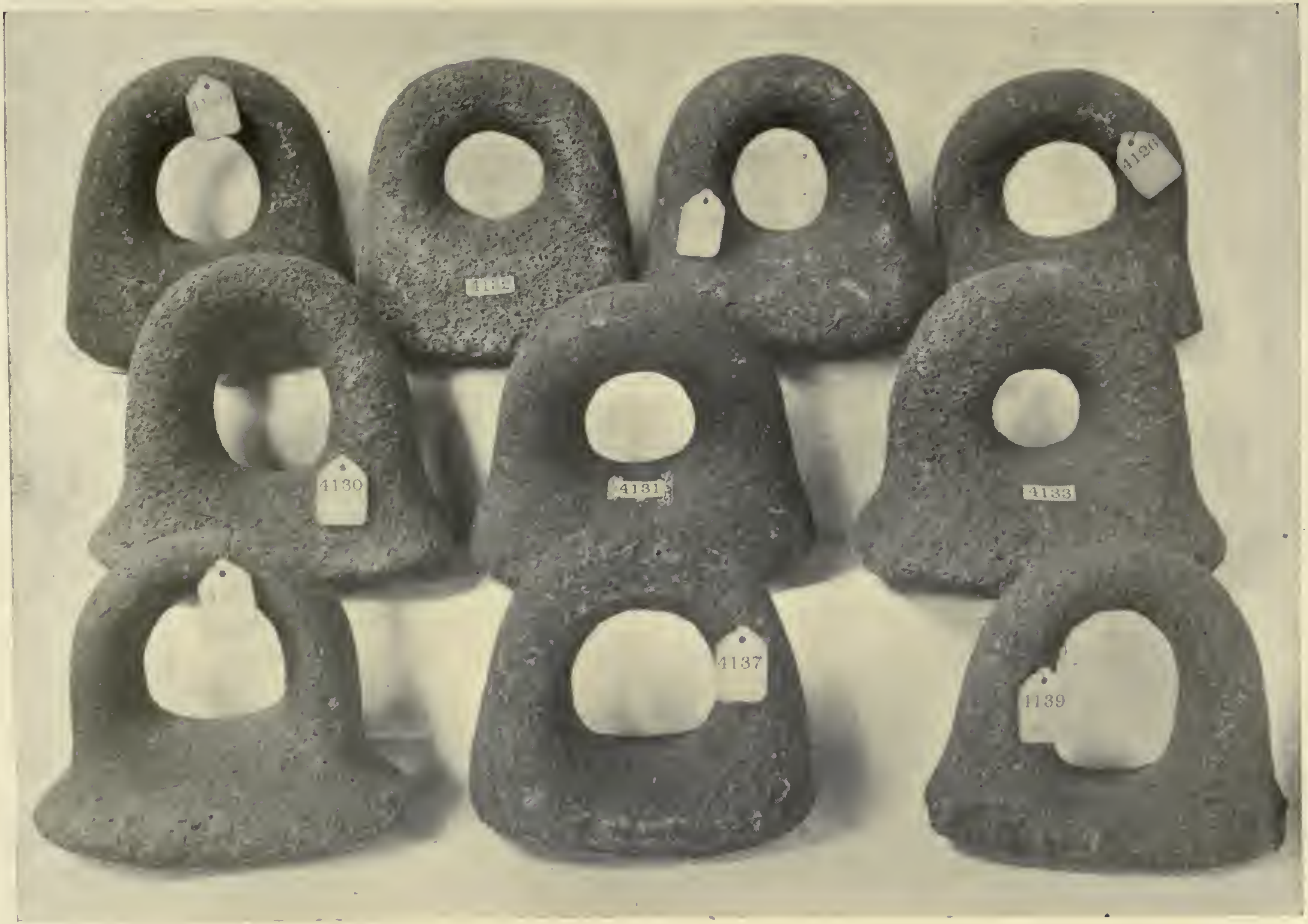


STIRRUP-LIKE POUNDERS FROM KAUAI.

PLATE XLV.

Ring Poi Pounders from Kauai (Na Pohaku Puka).

4120. 4138. 4130. 4133. 4137.
4132. 4126. 4131. 4121. 4139.

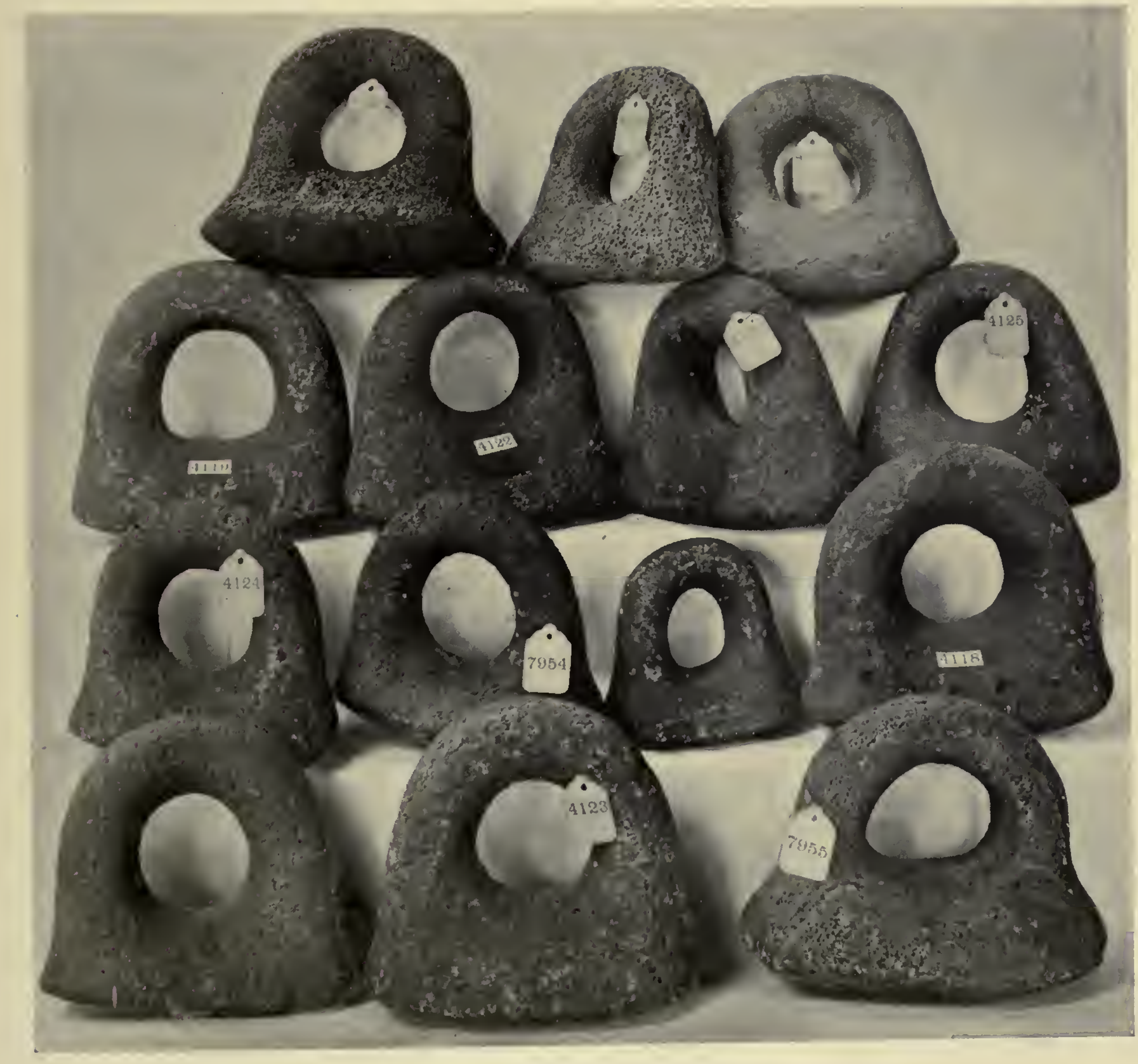


RING POI POUNDERS FROM KAUAI.

PLATE XLVI.

Ring Poi Pounders from Kauai.

4129.	4128.	8000.	4119.	4122.	4127.	4125.
4124.	7954.	4134.	4118.	4239.	4123.	7955.



RING POI POUNDERS FROM KAUAI.

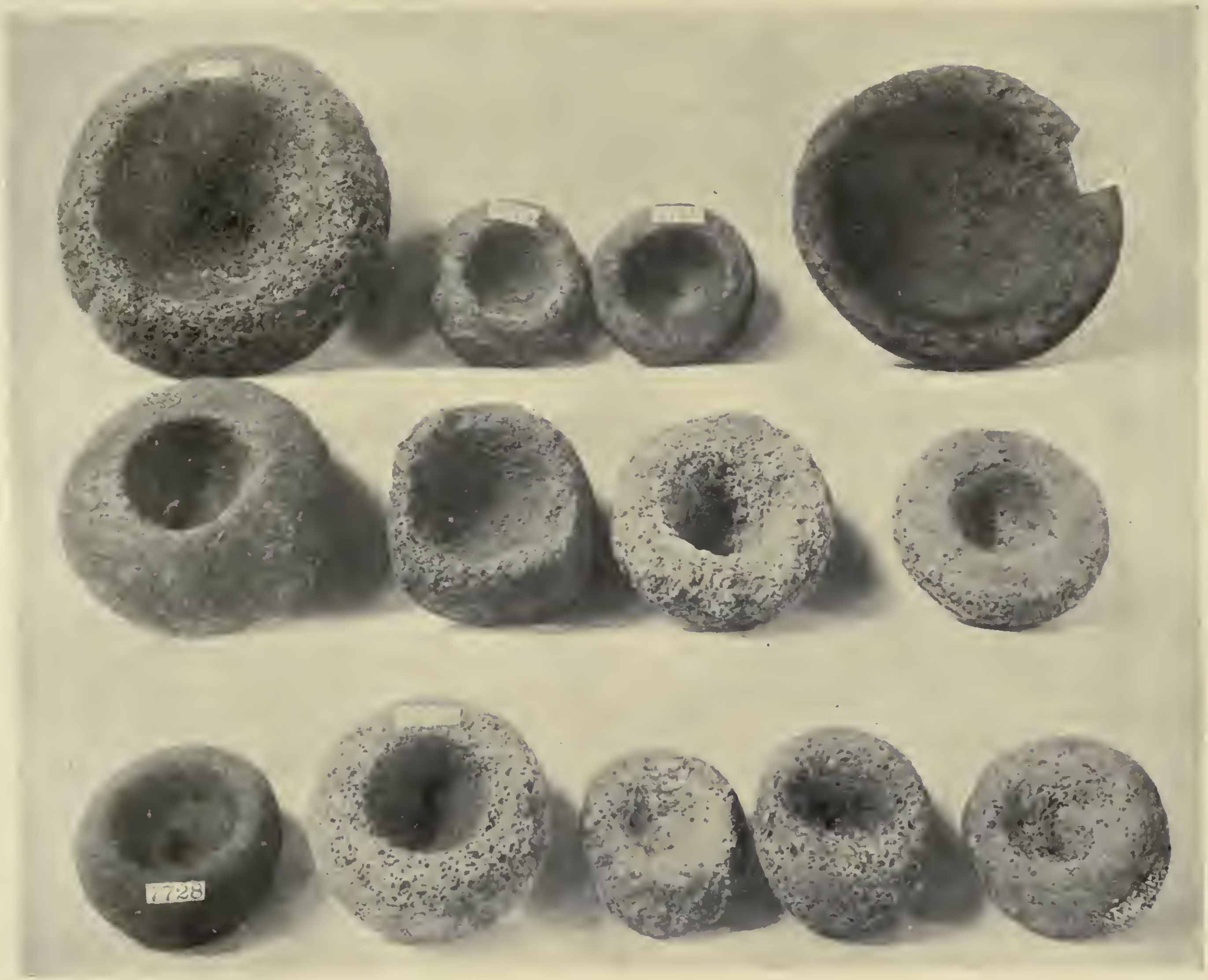
PLATE XLVII.

HAWAIIAN STONE MORTARS OR CUPS.

5163. 5164. 5161. 1229.

7925. 7926. 7927. 7928.

7728. 5162. 7929. 7930. 7931.

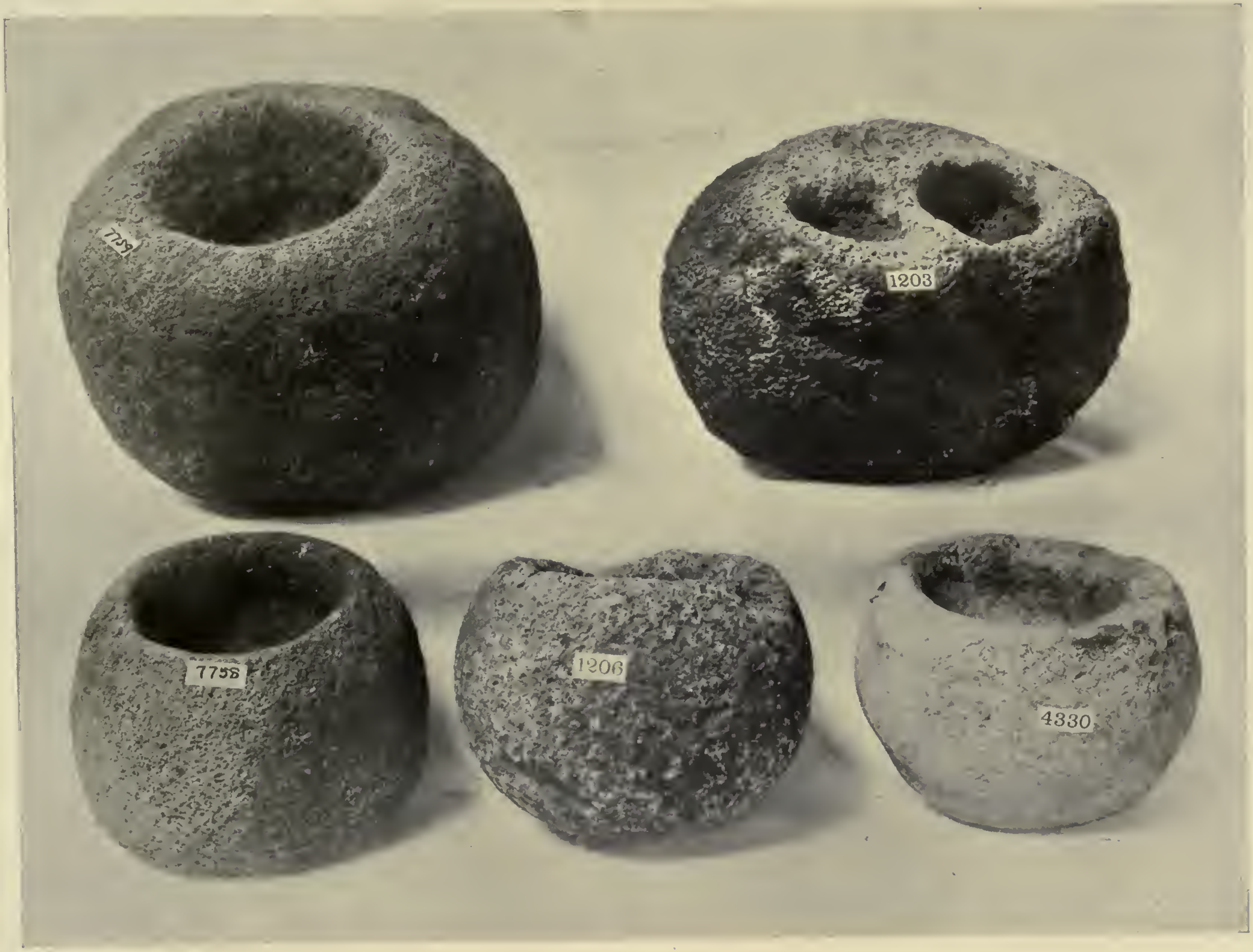


HAWAIIAN STONE MORTARS OR CUPS.

PLATE XLVIII.

Hawaiian Stone Lamps.

7759. Deep cup with cistern.
1203. Three natural cups, two of them used.
7758. Flat base and very large cup.
1206. Almost spherical; broken on the lip.
4330. Cup with cistern.



HAWAIIAN STONE LAMPS.

PLATE XLIX.

HAWAIIAN STONE LAMPS.

1205. Square block of cellular lava with rounded corners.

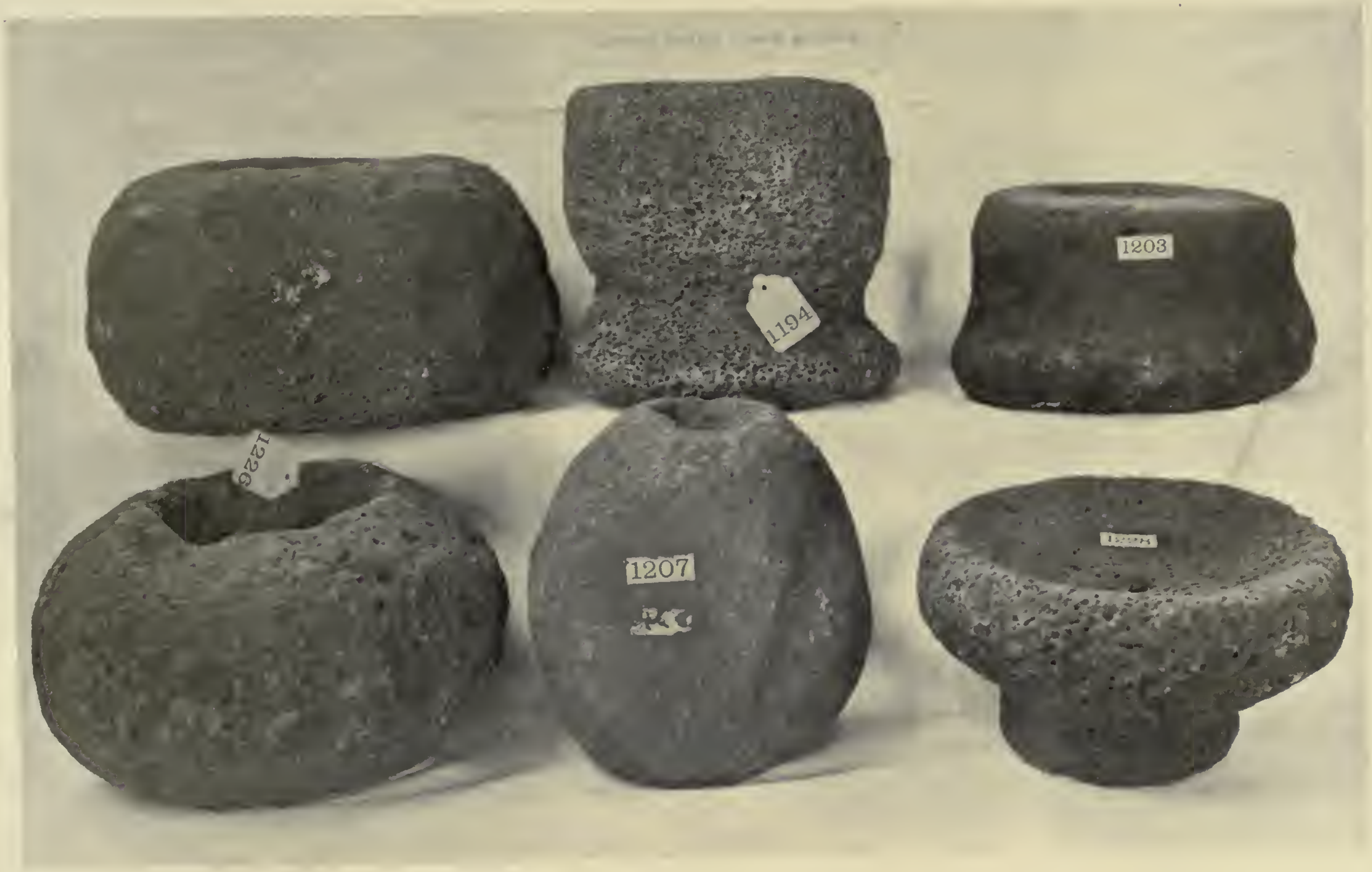
1194. The upper portion rudely pentagonal.

7691. Cup with cistern; saturated with burned oil. [Wrong number on plate.]

1226. Perhaps also used for a mortar.

1207. Unwrought, with very small cup.

1228. Cistern in a rather shallow cup.

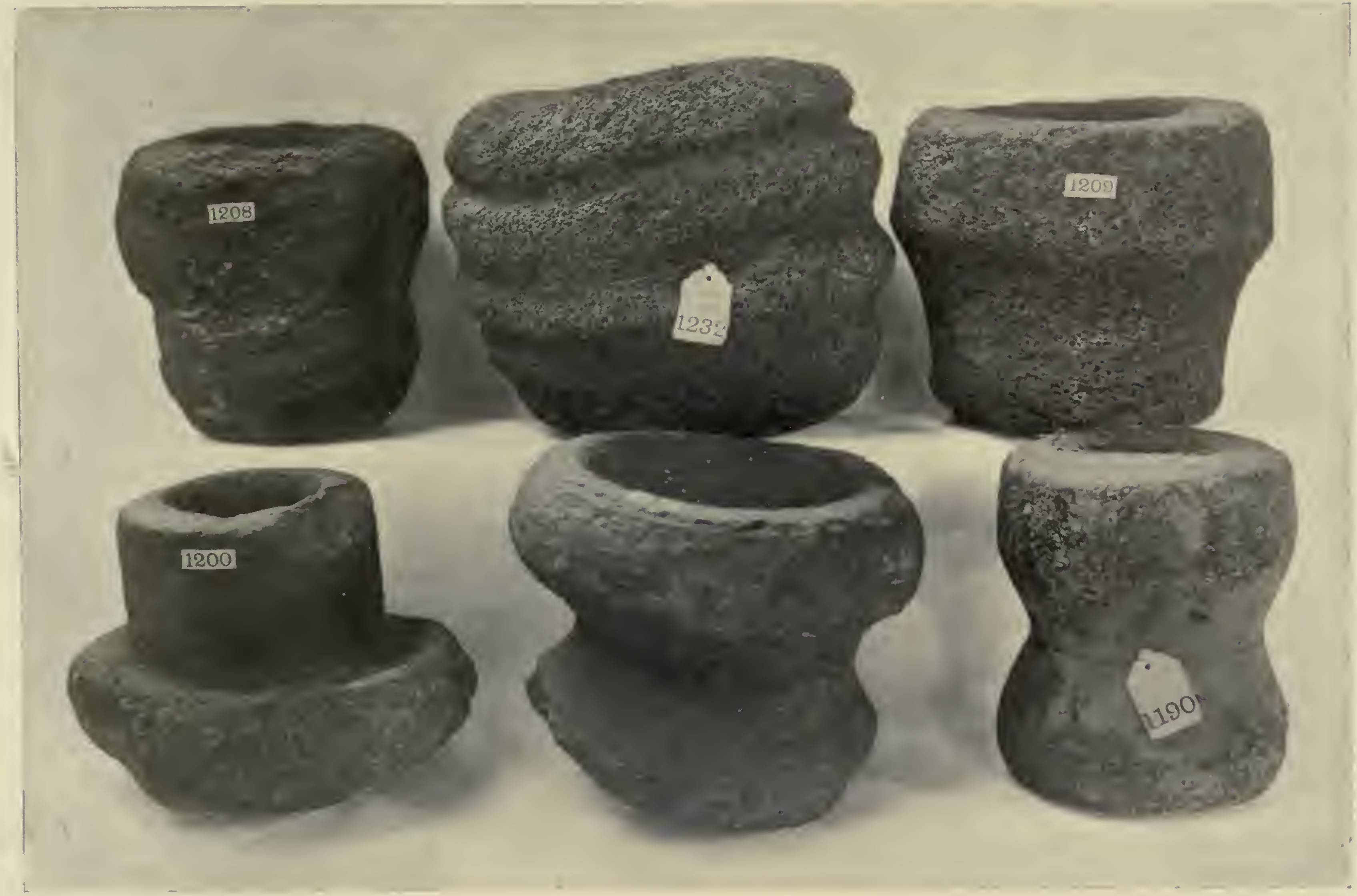


HAWAIIAN STONE LAMPS.

PLATE L.

Hawaiian Stone Lamps.

1208. Cup at each end, the upper one larger.
1232. Deep cup; found in 1880; Kulaokahua, Oahu.
1209. Large cup without cistern.
1200. Cistern in cup; rim for candlenuts; Kohala, Hawaii.
4333. Striated stone; round as if turned.
1190. Cups at both ends with cisterns.

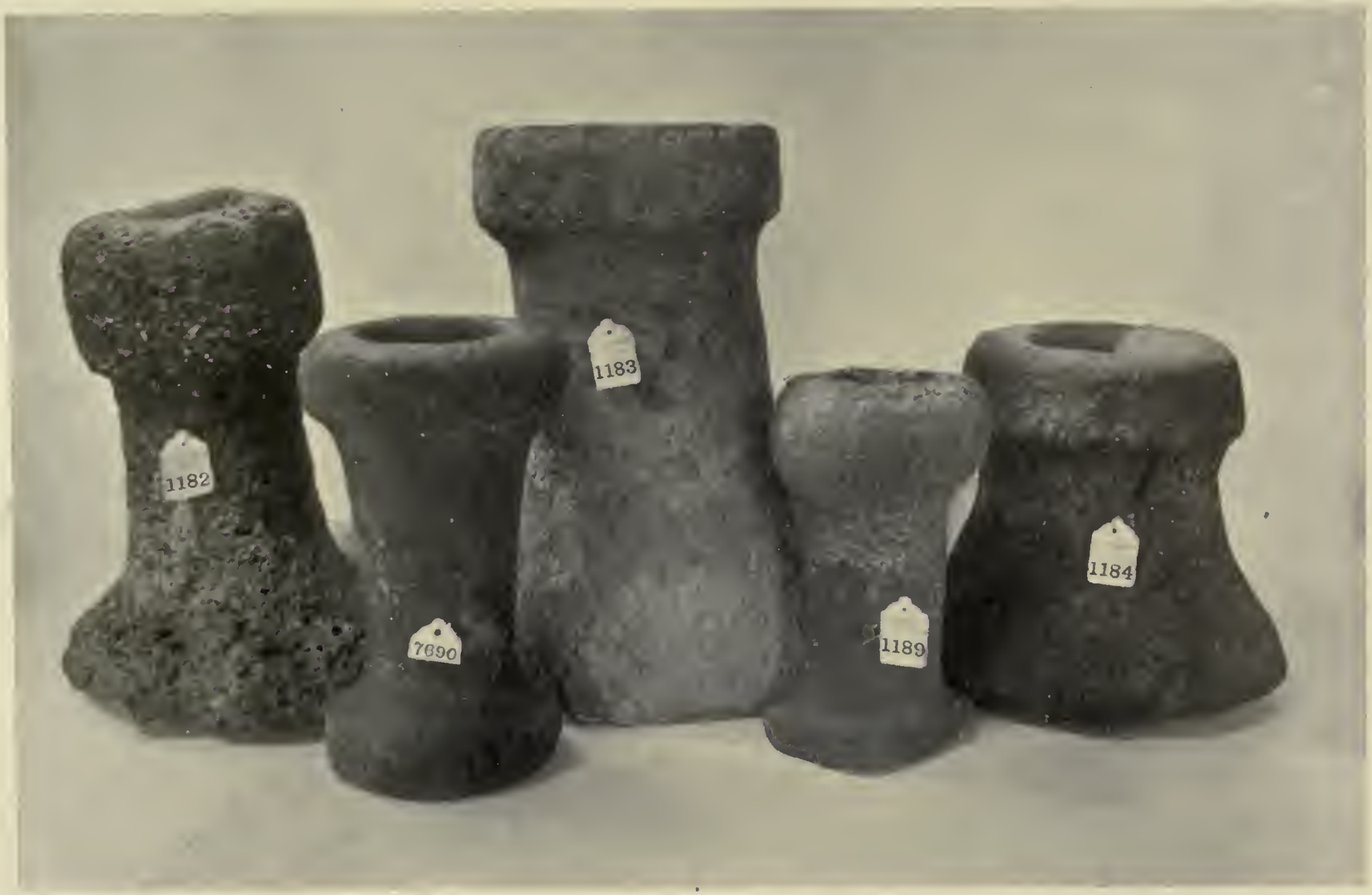


HAWAIIAN STONE LAMPS.

PLATE LI.

Hawaiian Stone Lamps. (Na Poho Kukui.)
Mainly of phallic origin.

1182. 7690. 1183. 1189. 1184.

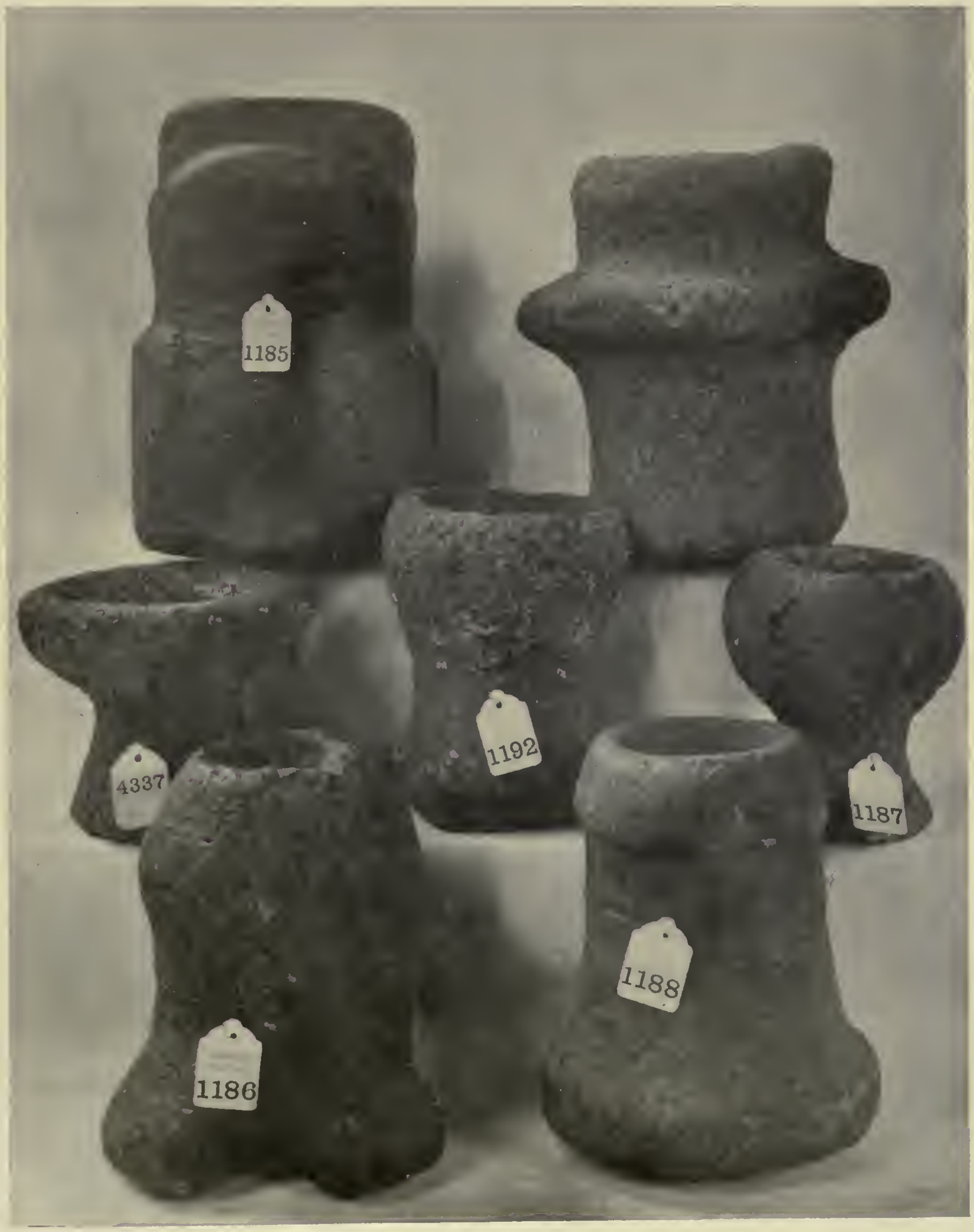


HAWAIIAN STONE LAMPS.

PLATE LII.

Hawaiian Stone Lamps.

1185. Shallow cup for nuts.
4340. Unusual rim.
4337. Broad top and narrow base.
1192. Cistern in the cup.
1187. Cup two inches deep.
1186. Small cup; four feet.
1188. Smooth finish, phallic.

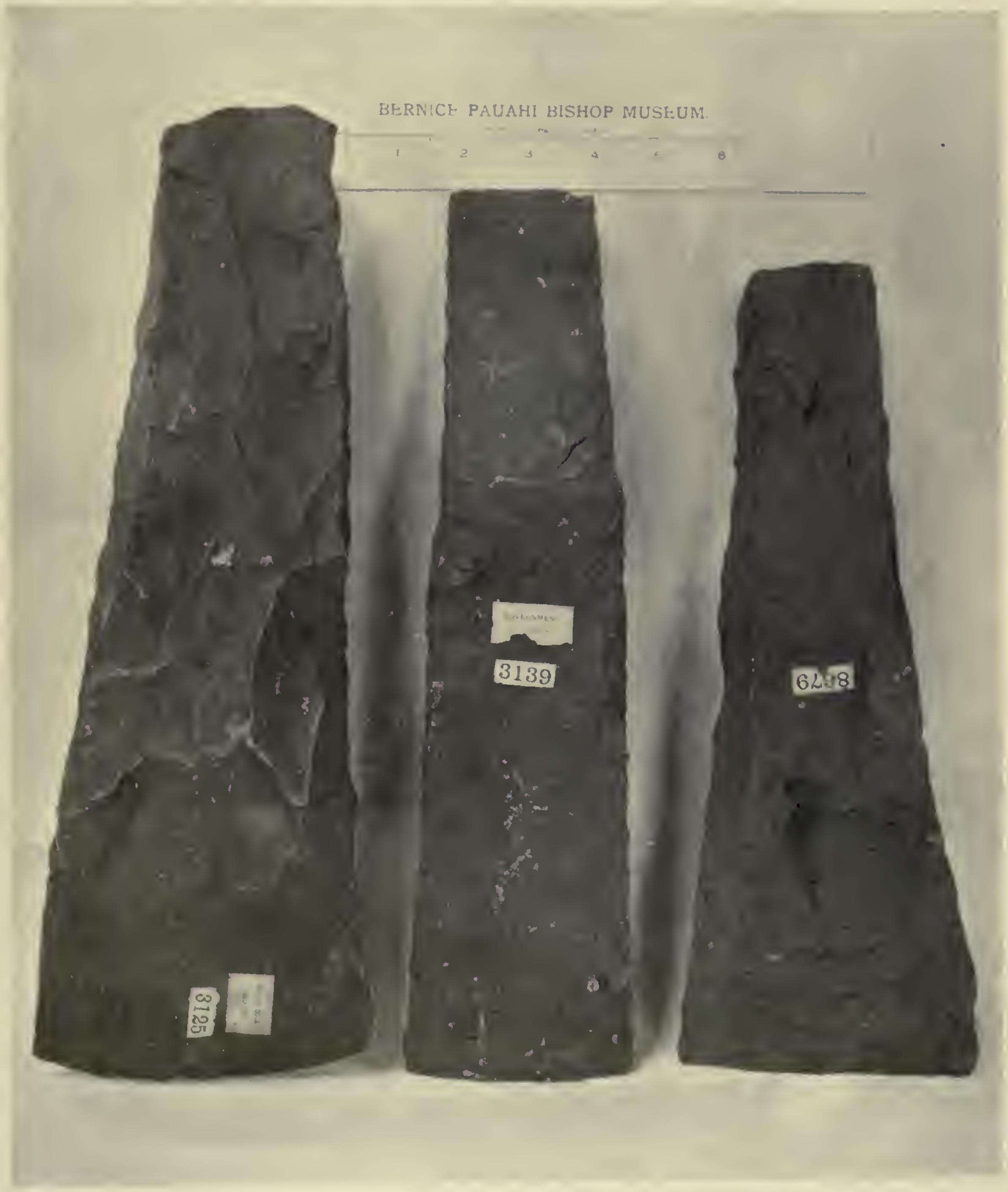


HAWAIIAN STONE LAMPS.

PLATE LIII.

HAWAIIAN STONE ADZES.

3125. 3139. 8679.

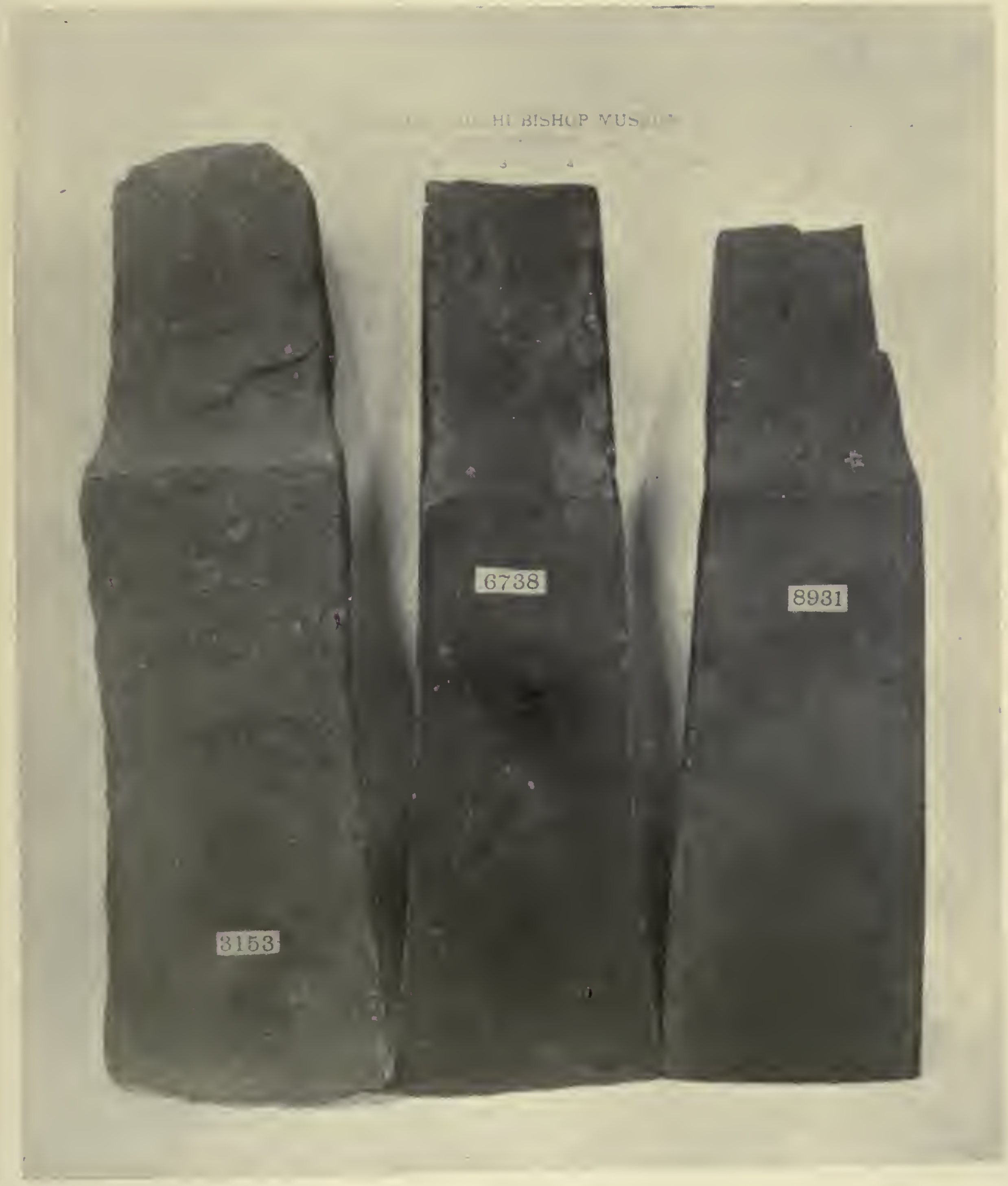


HAWAIIAN STONE ADZES.

PLATE LIV.

HAWAIIAN STONE ADZES.

3153. 6738. 8931.

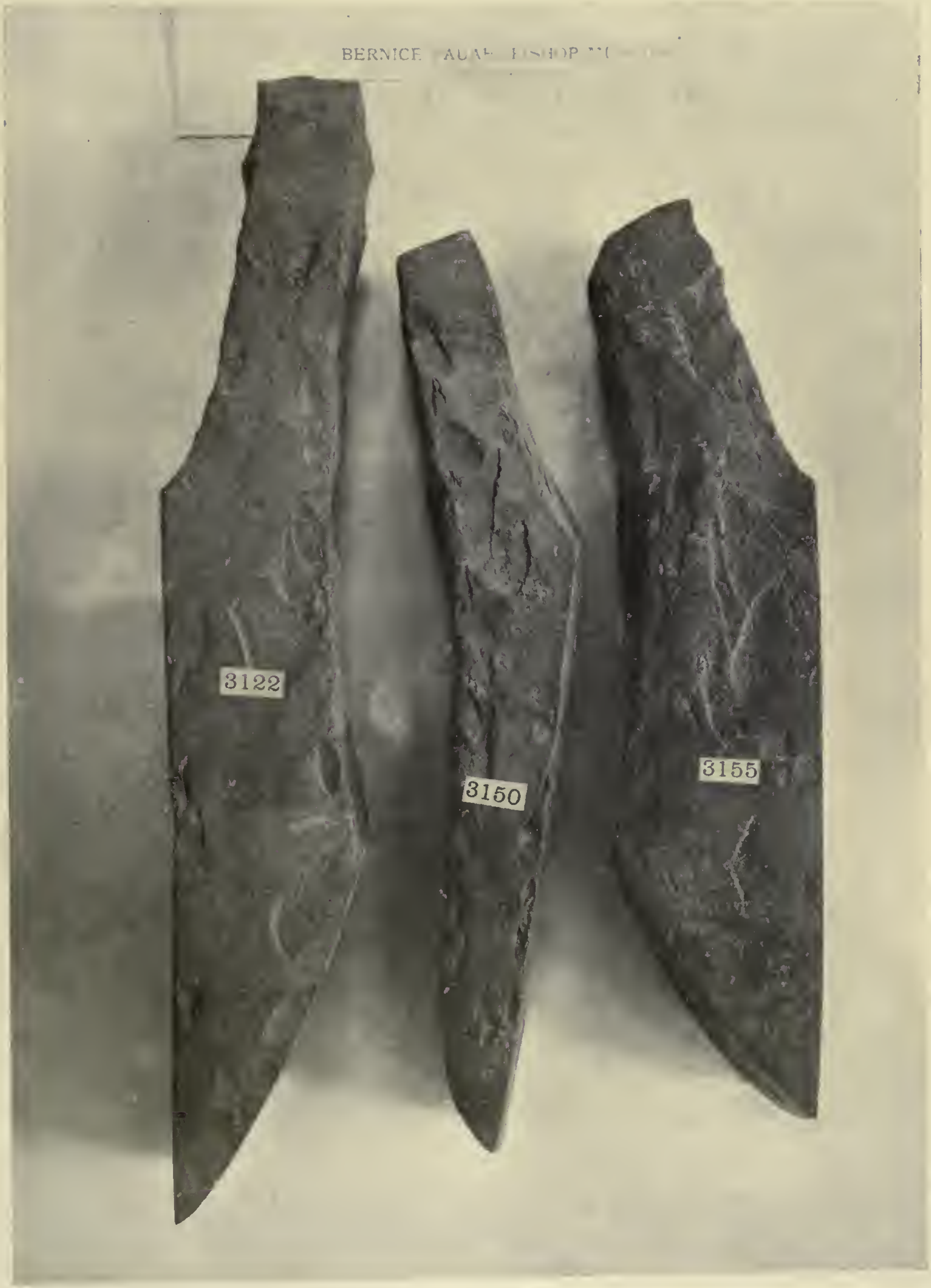


HAWAIIAN STONE ADZES.

PLATE LV.

HAWAIIAN STONE ADZES.
Viewed edgewise.

3122. 3150. 3155.

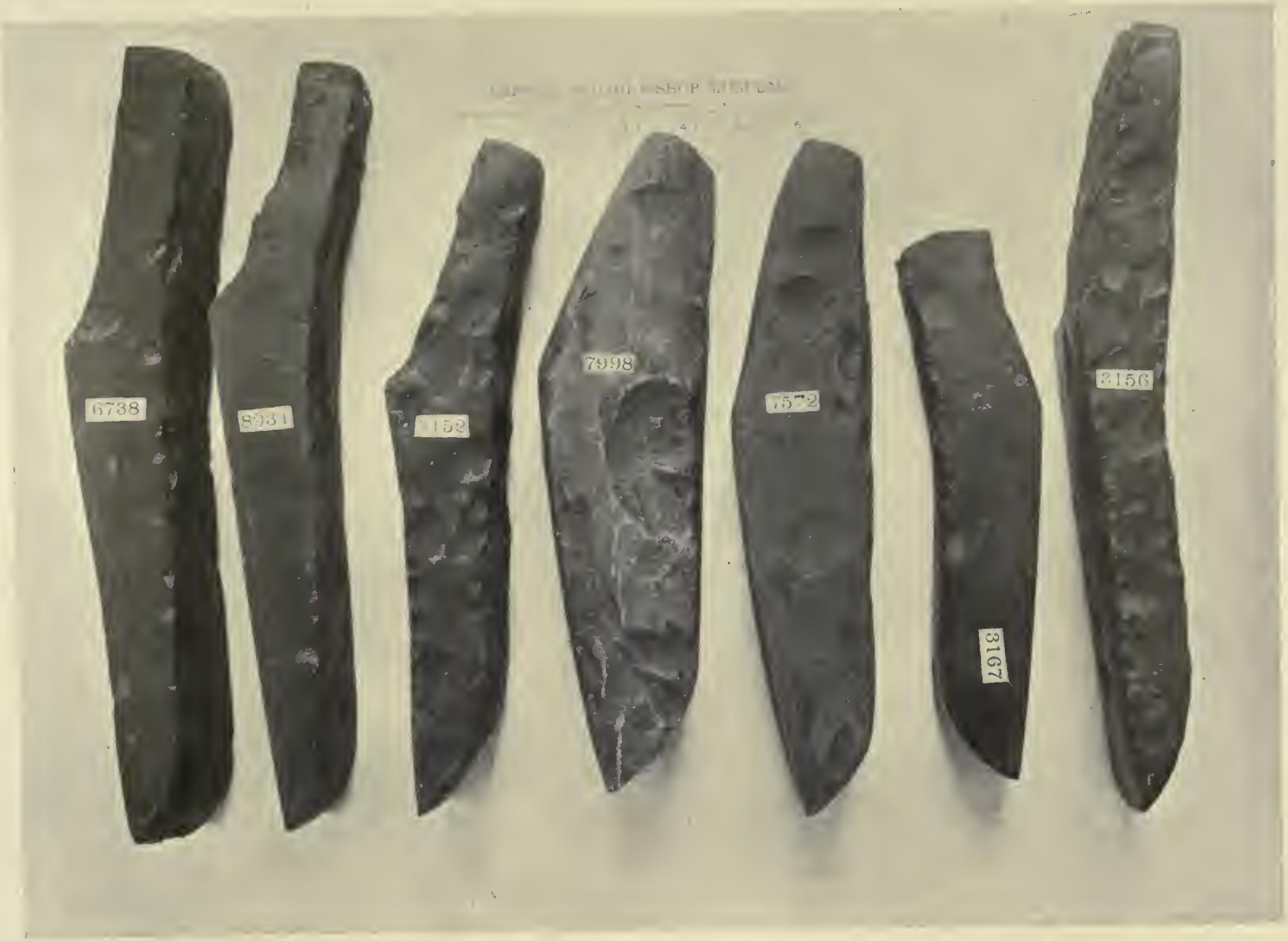


HAWAIIAN STONE ADZES.

PLATE LVI.

HAWAIIAN STONE ADZES.

6738. 8931. 3152. 7998. 7572. 3167. 3156.

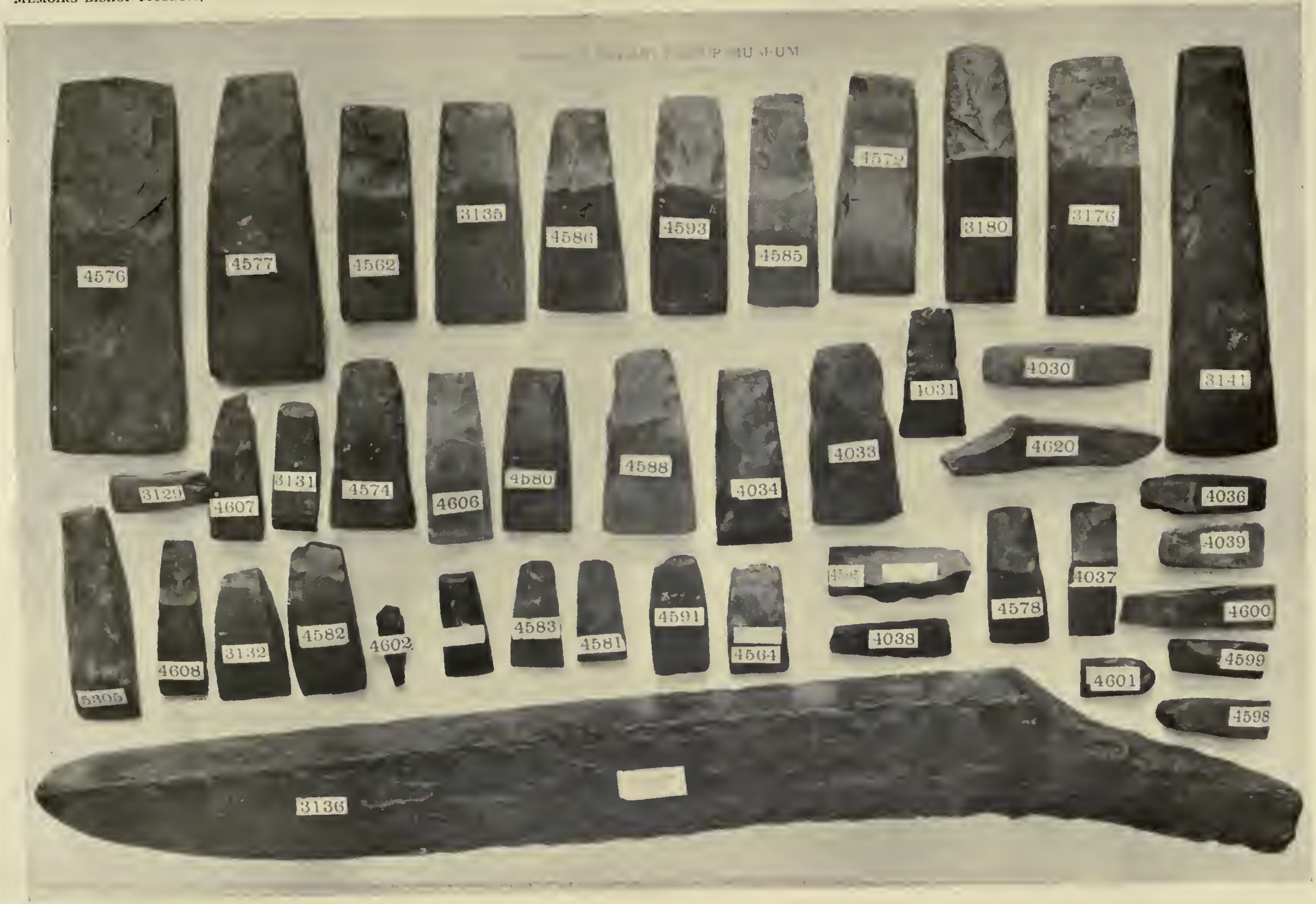


HAWAIIAN STONE ADZES.

PLATE LVII.

HAWAIIAN STONE ADZES.

PLATE LVII.



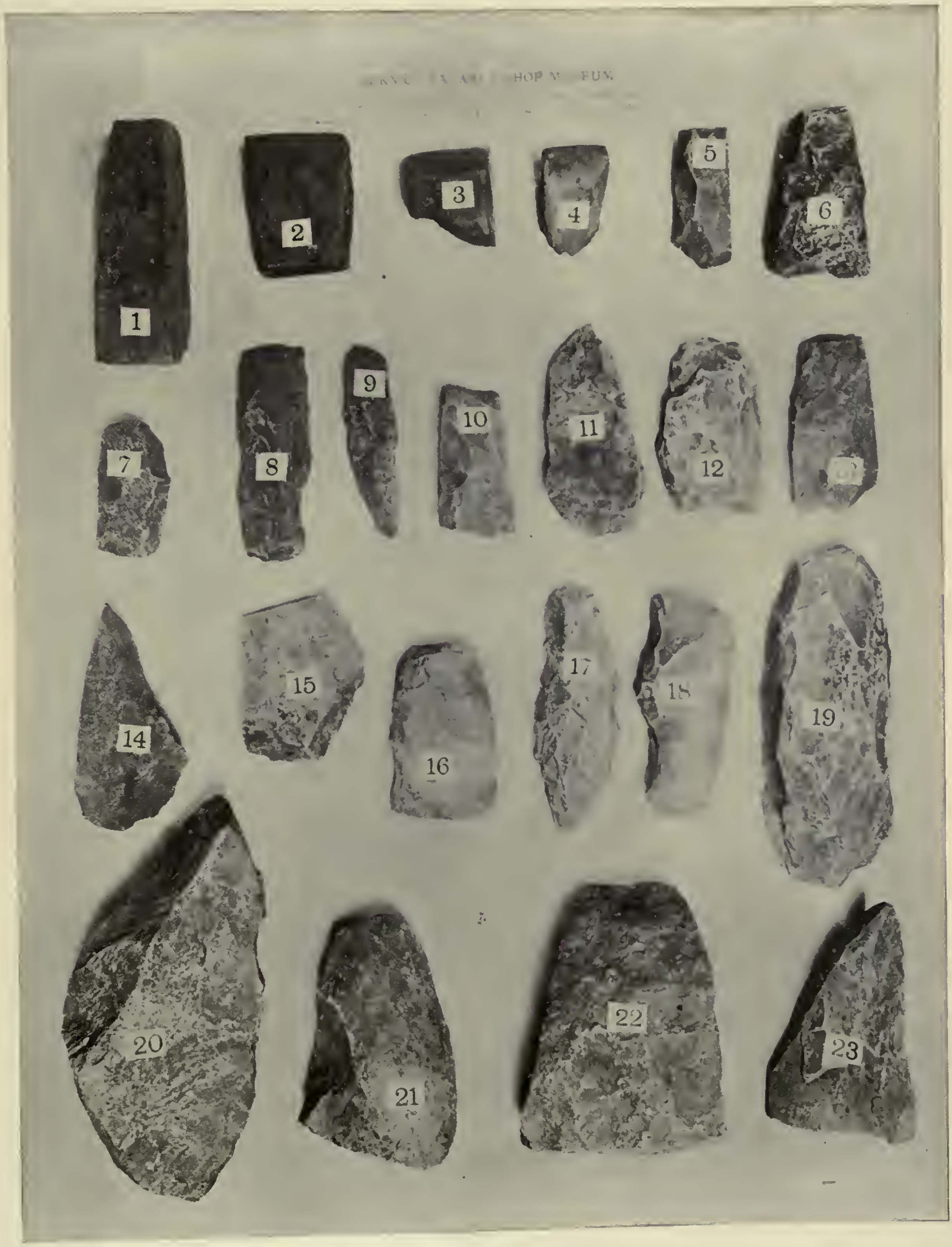
HAWAIIAN STONE ADZES.

PLATE LVIII.

FRAGMENTS FROM A WORKSHOP.

1. Tang of nearly finished adze, one side ground smooth, the other partly ground.
2. Distal end of well-ground adze, sides not ground.
3. Distal end of partly ground adze showing edge ground flat.
4. Distal end of well-finished sloping adze; conchoidal fracture.
5. Fragment, partly ground, of adze broken at both ends.
6. Roughed adze head; rejected for bad texture?
7. Fragment of flake or spall.
8. Adze fully shaped for grinding when corner of blade broke.
9. Cellular, highly silicious fragment.
10. Partly formed adze with sides ground.
11. End of flake.
12. End of flake.
13. End of flake.
14. Sharp end of spall, broad end showing striæ.
15. Fragment with a large flat cell.
16. Partly shaped flake for short adze; very solid.
17. Outside flake.
18. Partly formed adze.
19. Partly formed adze.

20–23. Cores.

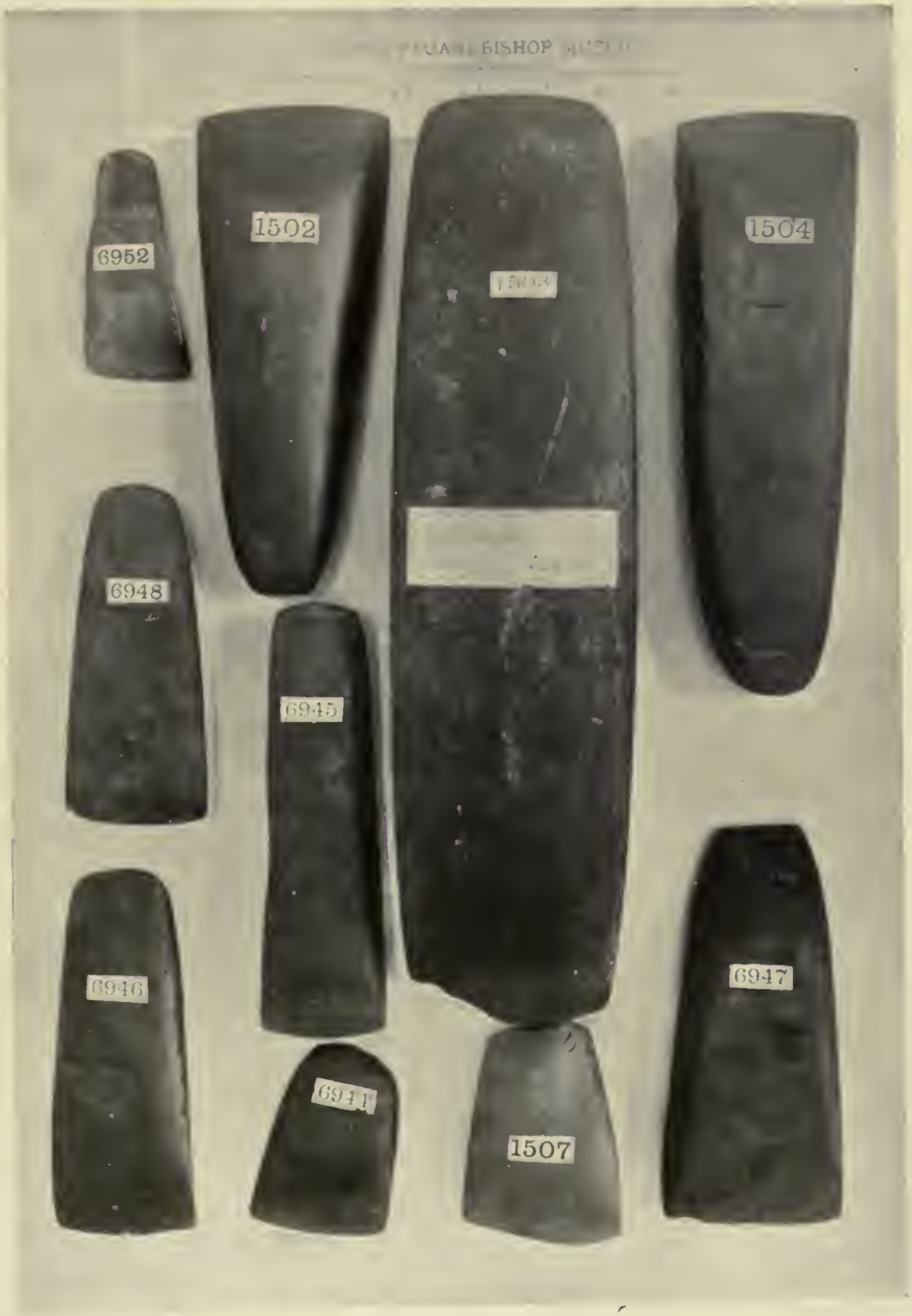


FRAGMENTS FROM A WORKSHOP: KAUAI.

Plate LIX.

Maori Adzes or Axes.

6952. Thin jade; angular blade.
1502. Brown phonolite.
1503. Transverse ridge, no tang.
1504. Grey stone, sides beveled on top.
6948. Brown phonolite.
6945. Brown lava or phonolite.
6946.
6944. Dark phonolite, angular blade.
1507. Light greenstone, blade at angle.
6947. Grey lava, sides beveled.



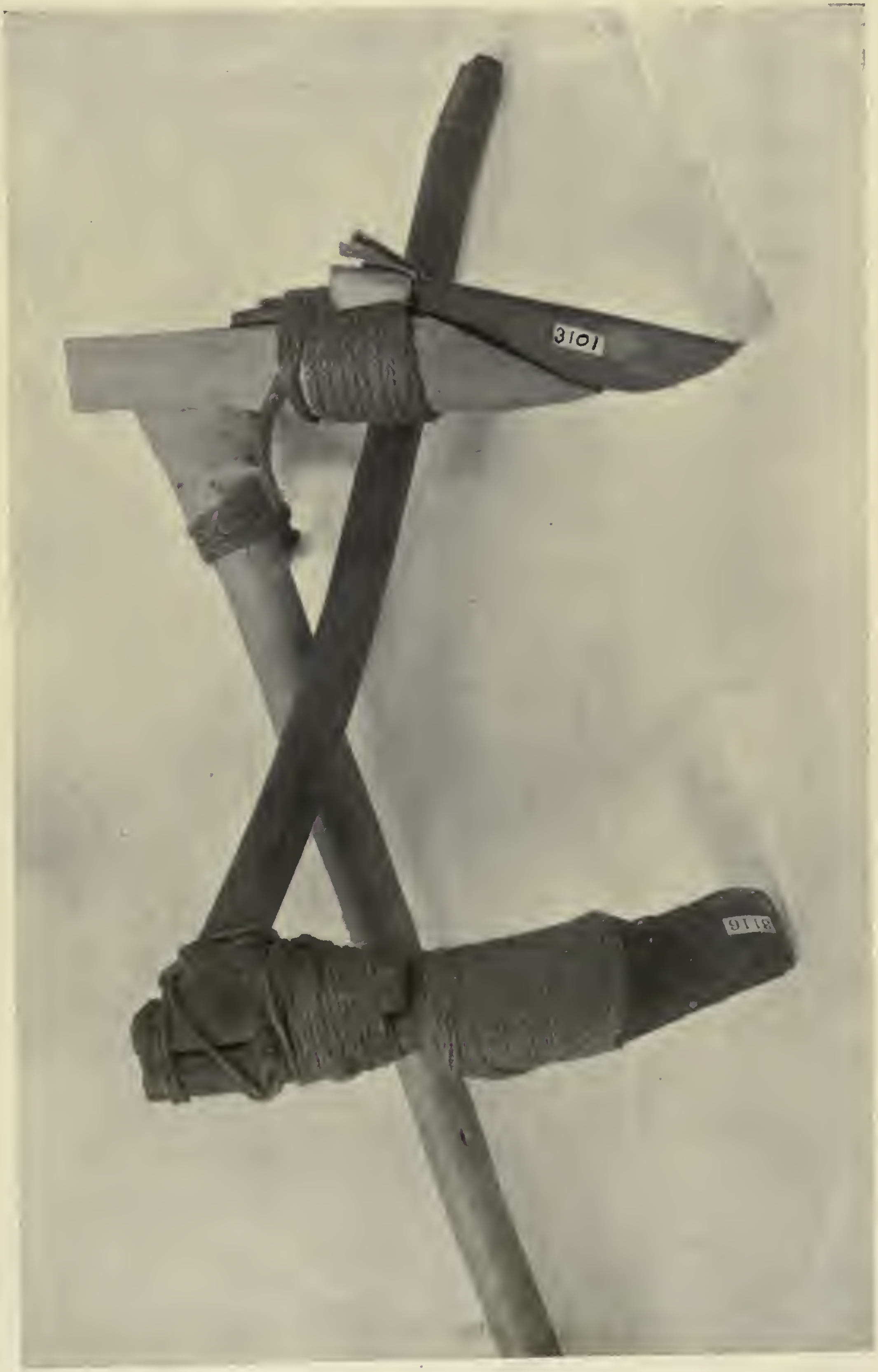
MAORI ADZES OR AXES.

PLATE LX.

HAWAIIAN ADZES HANDLED.

3116. An adjustable adze of the Kupaaikee pattern. It can be made either left- or right-handed, for canoe excavating, etc.

3101. An ordinary adze with the blade attached by coconut fibre braid.



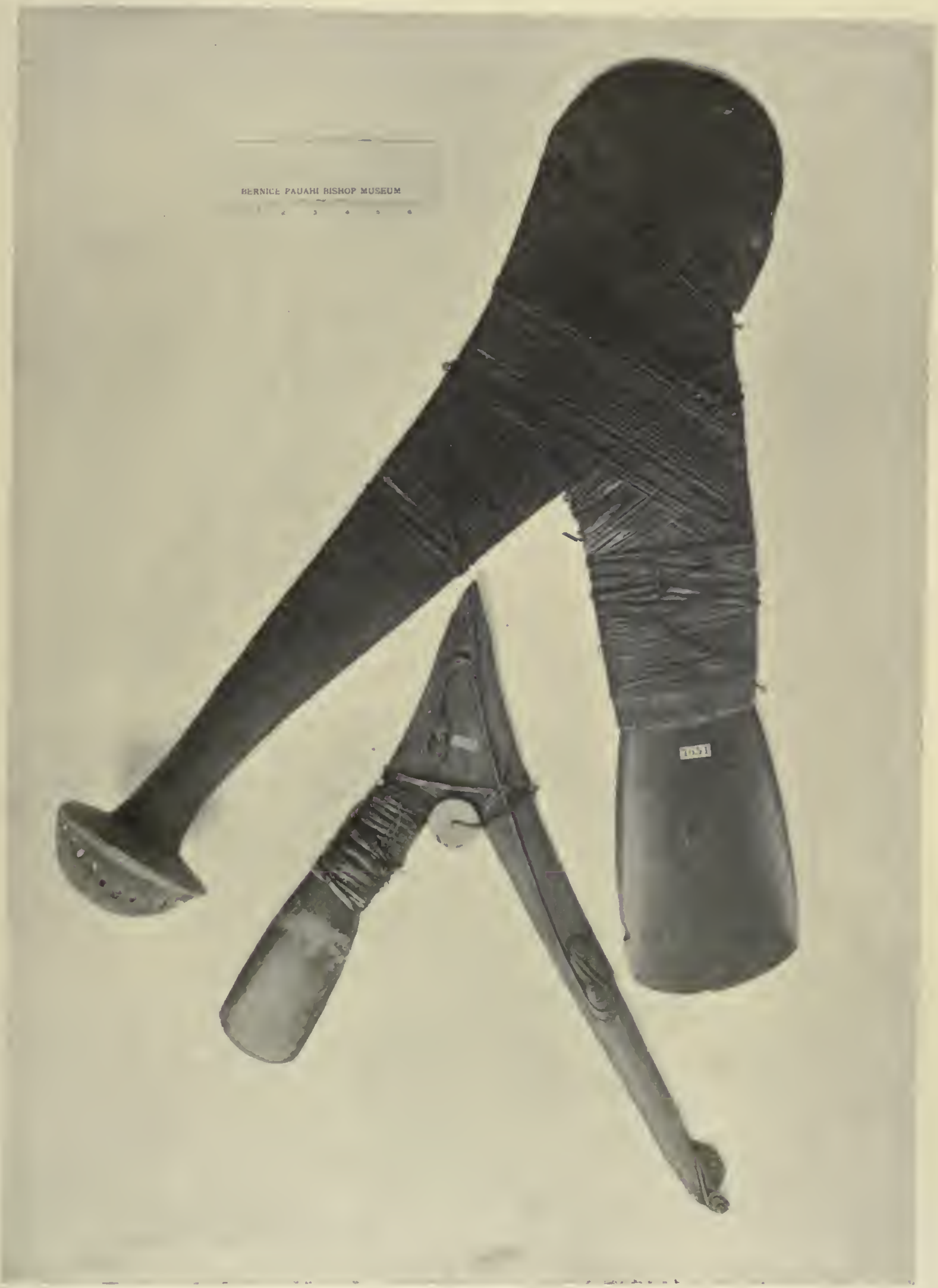
HAWAIIAN ADZES HANDLED.

PLATE LXI.

FLAT CEREMONIAL AXES.

1551. From Duau, of the D'Entrecasteaux group, The blade of jadeite, although large, is flat and thin. The end of the handle was formerly decorated with feathers.

1552. From Huon gulf, New Guinea. The blade is similar to the last, but much smaller. The handle is artistically carved. Native name, Ki.

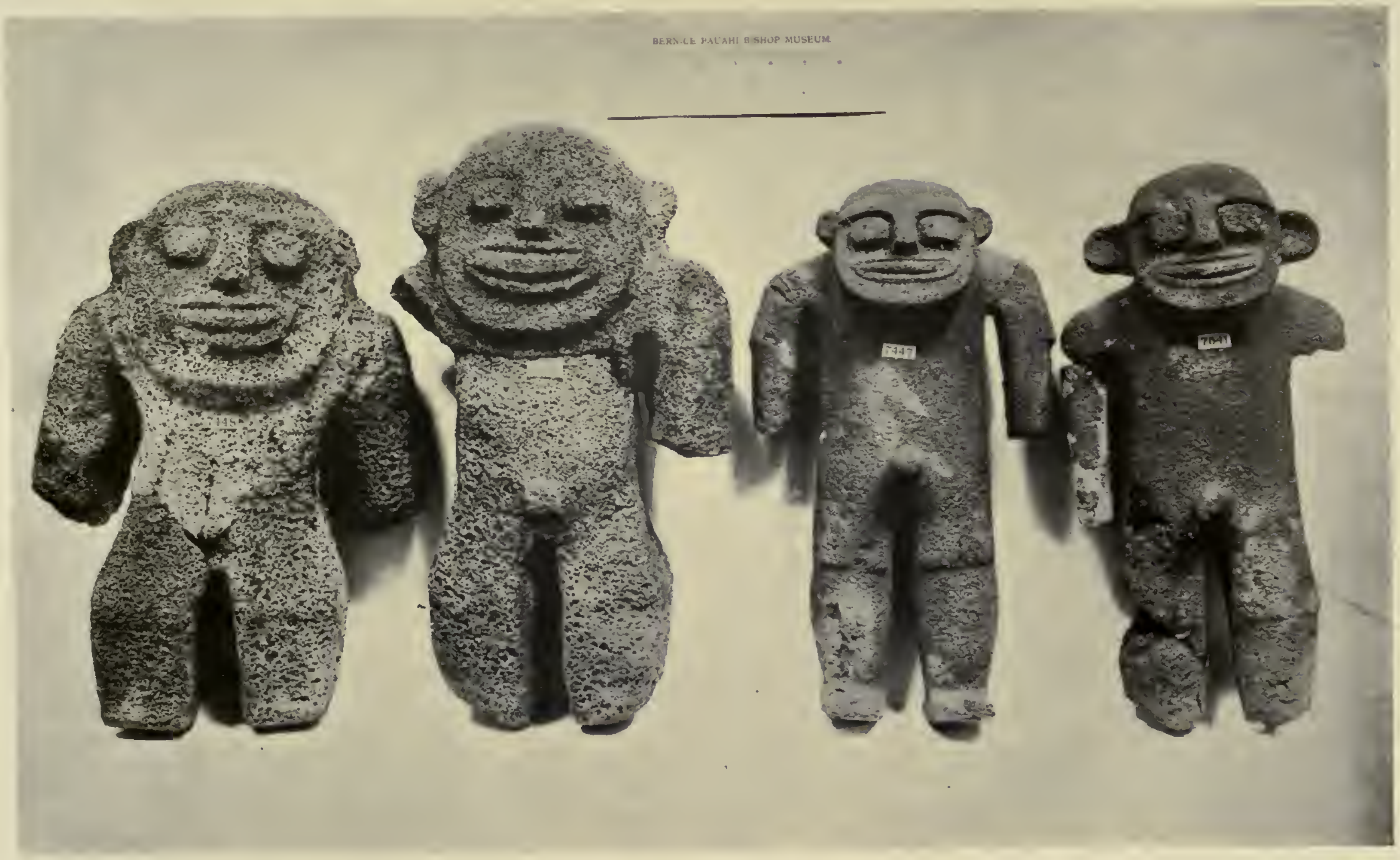


FLAT CEREMONIAL AXES.

PLATE LXII.

Stone Images from Necker Island.

Found in fragments on this uninhabited island. The first two are of coarser lava than the last two, and all seem to be made of common Hawaiian material.

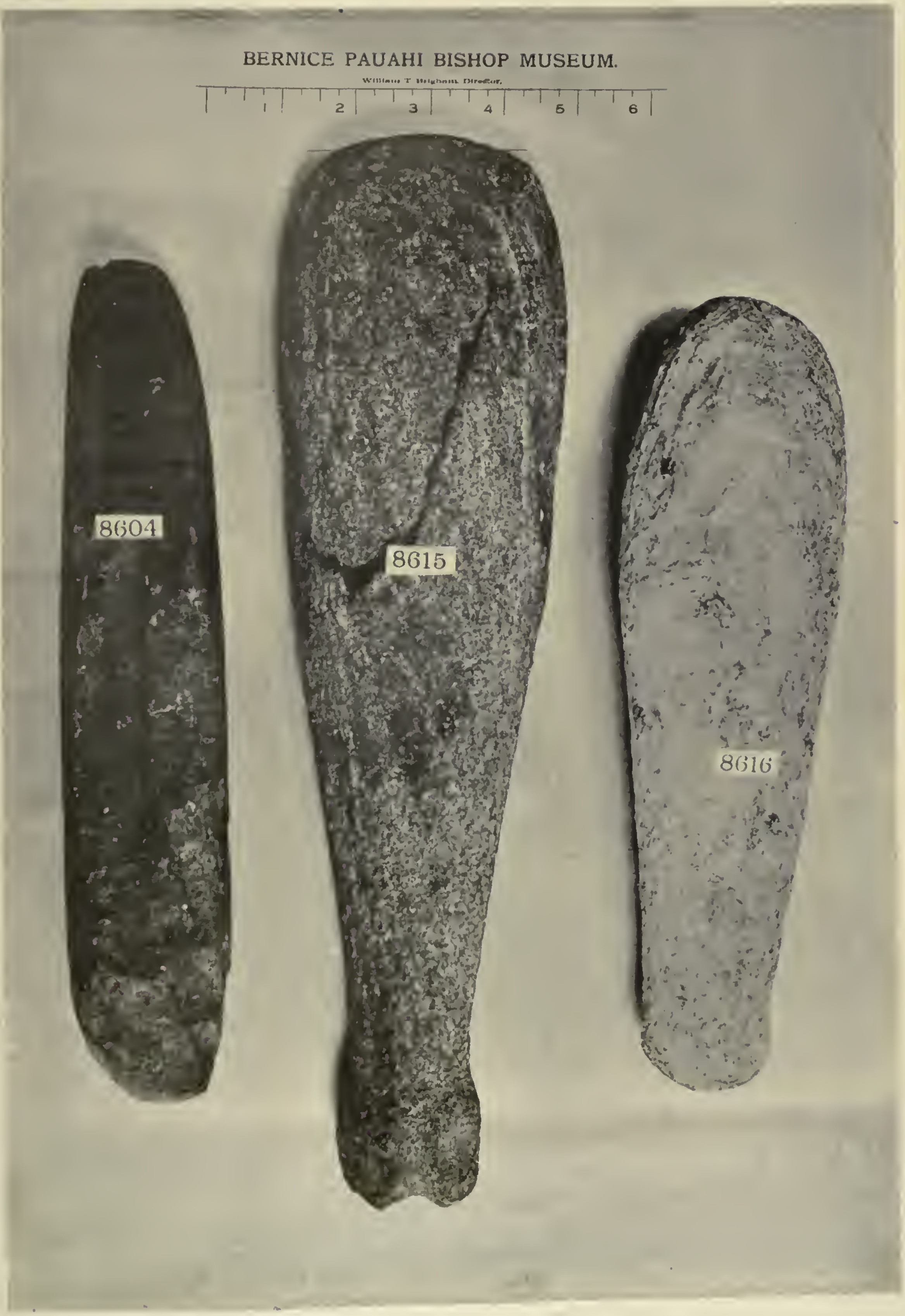


IMAGES FROM NECKER ISLAND, H. I.

PLATE LXIII.

PRIMITIVE MORIORI CLUBS.
Chatham Islands.

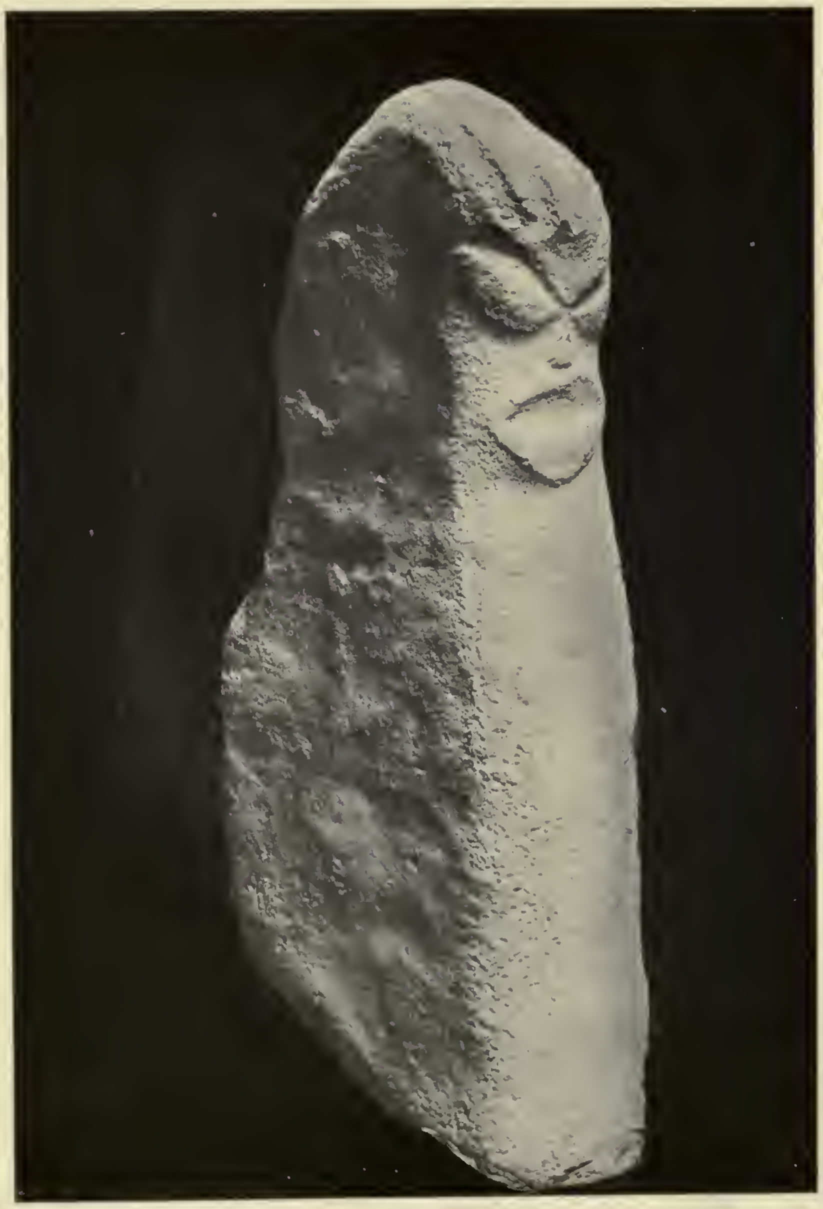
8604. 8615. 8616.



PRIMITIVE MORIORI CLUBS.

PLATE LXIV.

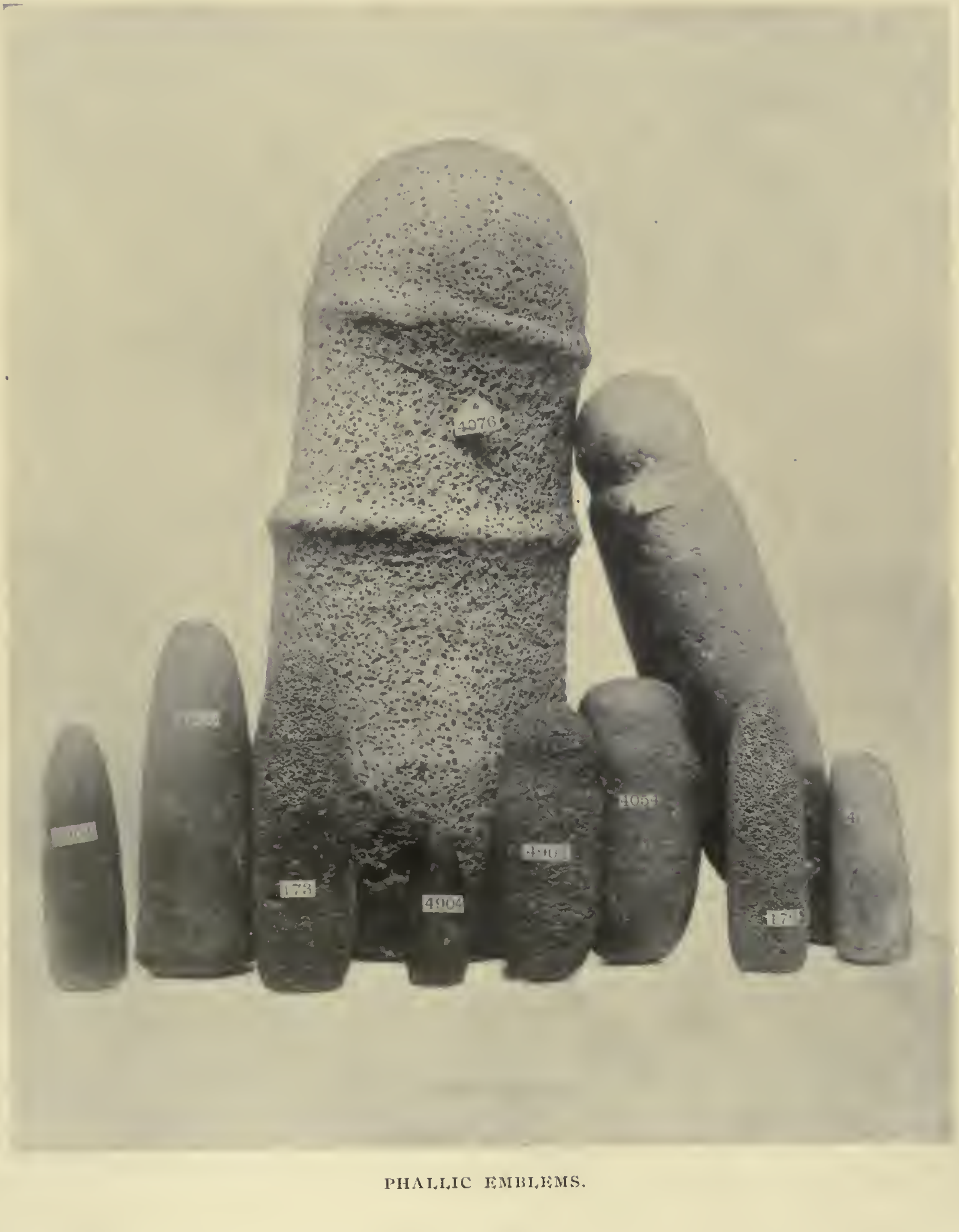
Idol formerly at Kahuku.



HAWAIIAN IDOL.

PLATE LXV.

Phallic Emblems.



PHALLIC EMBLEMS.

A.

ADDITIONAL NOTES

ON

HAWAIIAN FEATHER WORK

BY WILLIAM T. BRIGHAM, A.M.

Memoirs of the Bernice Pauahi Bishop Museum.

Vol. I. — No. 5.

page A to precede page 437

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Supplementary Notes to an Essay on Ancient Hawaiian Feather Work.

By William T. Brigham, *Director of the Bernice Pauahi Bishop Museum, Honorary Fellow of the Anthropological Institute of Great Britain and Ireland.*

When I published the introductory essay of this volume, on Hawaiian Feather Work, I hoped that it would interest some one to point out specimens of that work that had not fallen under the author's notice. That hope has been filled to a certain extent and herewith I offer the additions.

There has been a change in several of the names of the birds which furnish the feathers. The Oo, *Acrulocercus nobilis*, has dropped its inappropriate generic name and reverted to the older appellation *Mohoa nobilis*. The researches of my friend Mr. William A. Bryan, Curator of Ornithology in this Museum, have shown that what we who were not skilled in ornithologic distinctions had considered the common species of Tropic bird, *Phaëthon æthereus*, is really the *Phaëthon lepturus*. The Alalá or Crow returns to its former species and becomes *Corvus hawaiiensis*, and the false Mina is properly *Acridotheres tristis*. If then the reader who cares for correct nomenclature will adopt these changes he will have (for a time) the authorized names for the birds that furnish the feathers, the principal material with which we have to deal in treating of the beautiful work of the old Hawaiians. Having corrected these matters, which, I am happy to say, were not so much due to the carelessness or ignorance of the author as to the advance in Ornithology, we may turn at once to the additions that are to be made to the lists given in the original essay.

The feather mats shown in Plate VI. of this volume have been still farther examined by my friend Mr. Edge-Partington, and I may quote his note in Anthropological Reviews and Miscellanea, London, 1900:

> "Professor Brigham, in his Hawaiian Feather Work, refers to and figures two feather mats in the British Museum, which together with a coronet of similar manufacture form the subject of this note. Professor Brigham first saw these when on a visit to this country. He then considered that they were not Hawaiian; but since, failing to find any more likely locality, he places them "as mats on which offerings were made to the god Kukailimoku," until a better use can be found for them. If these were merely mats I fail to see the use of the tying cords fastened to each end. Why, too, should the makers have departed from their usual custom of mounting feathers on a network of olona fibre, a much more suitable foundation than the thick rows of fibre of which these mats are made, wrapt and sewn together, a form of manufacture, moreover, which is not in vogue in Hawaii? Professor Brigham says that the patterns are quite unlike those used in the feather cloaks; but I think one can go further than that, and say that they are unlike any known pattern from Hawaii. We must therefore try and find another home for them, and I would suggest Tahiti, and that their use

was a protection when fighting. My reason for this attribution is that there are in the British Museum long, oblong boxes formerly supposed to come from Hawaii; by an inscription, only partly legible, on one of them in George Bennet's handwriting, we know now that these boxes are Tahitian. The inscription is as follows: '*A native ...... box made of the wood of the breadfruit tree ...... containing the war-like ornaments ...... Hautia, presented by him to G. Bennet, 1822, and which he says were worn by ...... also and preceding kings of Huaheine.*' This particular box was received, with other Eastern Pacific specimens, from the Sheffield Literary and Philosophical Society: the specimens originally in the Museum are without history, as are also the feather ornaments now under discussion. It may well be, therefore, that they were received at the same time, and possibly formed a portion of one of the early collections either of Captain Cook or Sir Joseph Banks. As against this theory Williams, in his *Missionary Enterprises*, p. 498, says that 'at Tahiti and Hervey Islands there are but few varieties of the feathered tribes; and these are not remarkable either for the beauty of their plumage or for the sweetness of their notes.' If, therefore, the mats and coronets were manufactured in the Tahitian group they must have been from imported feathers. Failing Tahiti there is the Island of Rurutu, in the Austral group, 'the people of which are distinguished above all others in these seas, for their taste and skill in finery of every kind, from the feathered helmets of their warriors to the carving on their canoes......In manners, dress and language they very nearly resemble the inhabitants of Tahiti and Huaheine.' (*Tyerman and Bennet's Voyages*, 1831, Vol. I., p. 496.) The only reason for placing these objects in the Hawaiian section, until some definite locality is obtained, is that the feathers used are evidently from the same birds as those from which the Hawaiians gathered their stores."

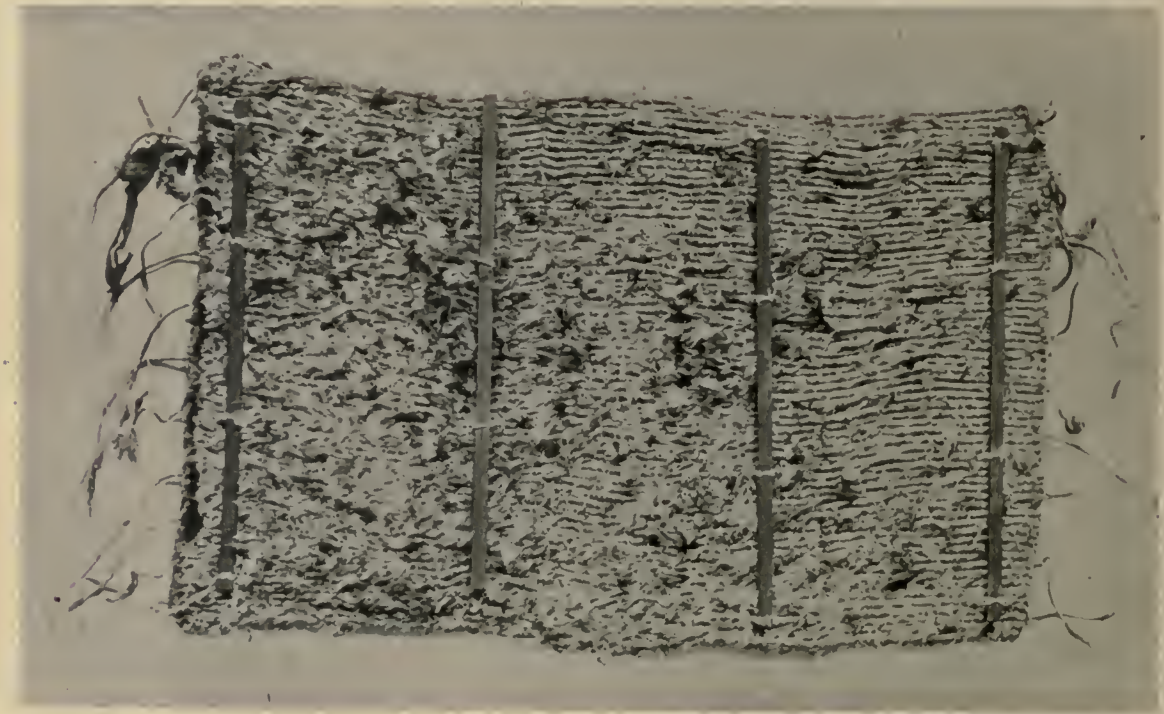

FIG. 1. UNDER SIDE OF ONE OF THE MATS SHOWN IN PLATE VI. OF THIS VOLUME.

I cannot see any good reason for changing the opinion expressed on page 37, that as the feathers are undoubtedly Hawaiian (the birds that yield them being peculiar to the Hawaiian group), and as the method of attaching the feathers was not unknown on this group, the mats are more likely to be Hawaiian than anything else yet suggested. For the purpose of a stiff mat a loose net of oloná would seem quite unsuitable. For protection in war these very brilliant and gaudy mats would attract the arrows or missiles of the enemy, from which they would offer as much protection as a common newspaper.

The figure of the under side of one of these mats, which I did not have at the time the plate was published, will, I think render my claim that the specimens are mats, more stable; for the sticks, four in number, that are inserted to stiffen the structure would make it difficult to wear them in battle, except they were used like the stays of the French *gens-d'armes*, which would be quite foreign to the Polynesian ideas of propriety. Perhaps Mr. Edge-Partington will roll one of them up and try if it will go into the box which seems, as he says, Tahitian. From the picture he gives of this receptacle I should think it would not fit. The strings need not entangle us, for they are hardly suited to tie together or to anything else, but seemed to me to be analogous to the strings often left on towels partly for ornament and partly to keep the warp and woof together.

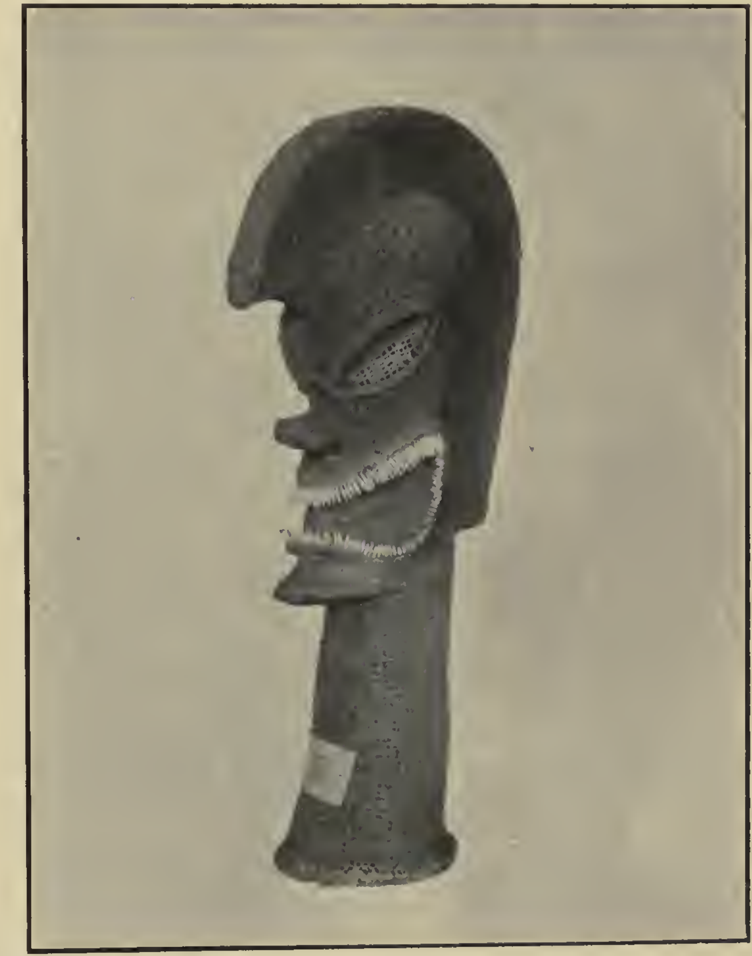

FIG. 2. KUKAILIMOKU. NEWCASTLE-UPON-TYNE.

It is difficult to decide upon the matter in the absence of the specimen, but it seemed to me that perhaps the sticks were not a part of the original manufacture, but added as "spreaders" for exhibition purposes. If these sticks were removed the fabric would easily roll together and the cylinder thus formed might still be connected with the god Kukailimoku in this way: I am informed that in moving the feathered head it was raised on a pole and borne by its *kahu* or keeper; why not cover the pole with this feather ornament? I am inclined to think that it would about fit the truncated neck of the war god. When the idol rested my former idea of the mat would be appropriate still. As will be shown in the chapter on ancient Hawaiian worship it was an almost universal custom to place all small (that is movable) idols upon mats, which were often covered with red kapa; and if wooden or stone gods, how much more should a deity formed of this most precious material be provided with a suitable substratum.

Kukailimoku.—To the small number of images of this great god and the tutelar deity of Kamehameha I. we can now add two more: one from the Oxford Museum (which in some way slipped from my notes on that wonderful collection, and which my friend Professor Henry Balfour recalls to my memory by the remarkable illustration given in Fig. 3), and the other from the museum of the Natural History Society, Barras Bridge, Newcastle-upon-Tyne. I quote from the interesting letter of E. Leonard Gill, Esq., the Curator of the Museum, the following details, and present in Fig. 2 the photograph sent therewith:

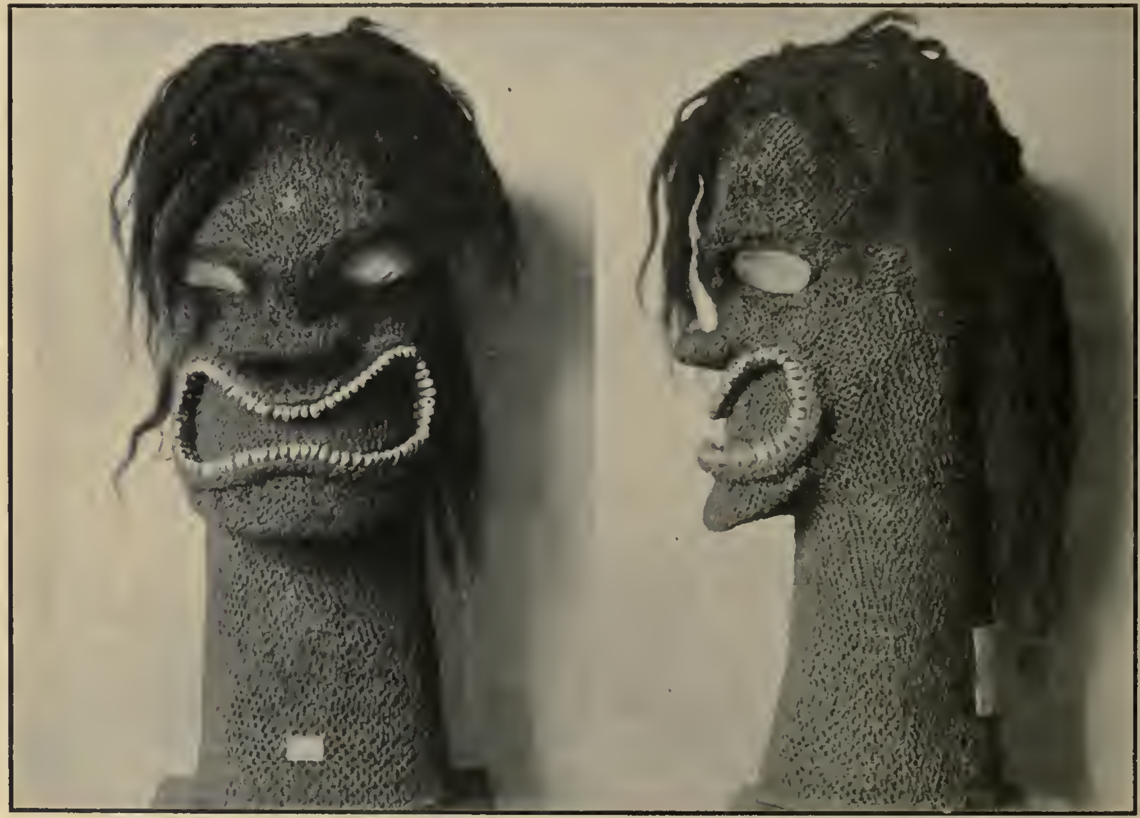

FIG. 3. KUKAILIMOKU IN THE OXFORD MUSEUM.

> "Total height, 32 inches; measurement along crest, 34.5 inches. This mask [idol], as the photograph shows, has lost all but a few stray feathers; in its present condition it consists of the basket framework, over which is stretched the fine netting into which the bases of the feathers were interwoven. The netting and the feathers were continued into the mouth but not into the eyes. The workmanship is admirable both for its firm, bold outlines and for the extreme skill shown in detail. The history of the idol is interesting but incomplete. It formed a part of the museum of Marmaduke Tunstall, F. R. S., at Wycliffe in Yorkshire; and on Tunstall's death in 1791 it passed with the rest of the museum into the possession of George Allan, of Blackwell Grange, near Darlington. Tunstall's collection was here systematised and greatly added to by Allan, and this, the "Allan Museum," was

purchased in 1822 by the Newcastle Literary and Philosophical Society, by whom it was soon afterwards handed over to the Natural History Society and formed the basis of their present museum. The Ethnological portion of the Allan Museum is practically all that is now retained, and that portion is of extreme value from the fact that the objects in it were collected long before the native handicraft had become debased. The examples from New Zealand and the South Sea Islands are particularly fine and there is every reason to believe that many of them were obtained in Captain Cook's Voyages. In a Synopsis of the Newcastle Museum (1827) the editor, G. T. Fox, in describing the contents of the Allan Museum, speaks as follows of these objects; 'Many of these articles are understood to have been collected during the voyages of Captain Cook, from some of the inscriptions on them, as well as from the title of Mr. Allan's MS. catalogue of his museum.' This particular mask [idol] is numbered 16 in the Ethnology section of the Allan Museum, and is thus described by Fox in his Synopsis, under the heading 'Owhyhee, and other Sandwich Islands': '16. Indian God or idol. Has been covered with the red feathers of the Hook-billed Red Creeper (Certhia vestiaria, Gml. and Lath.), which are also used by the natives for ornamenting their cloaks whilst intermixed with the olive feathers of another species (Certhia obscura[1]). Similar but better specimens of this idol are in the British Museum.' "

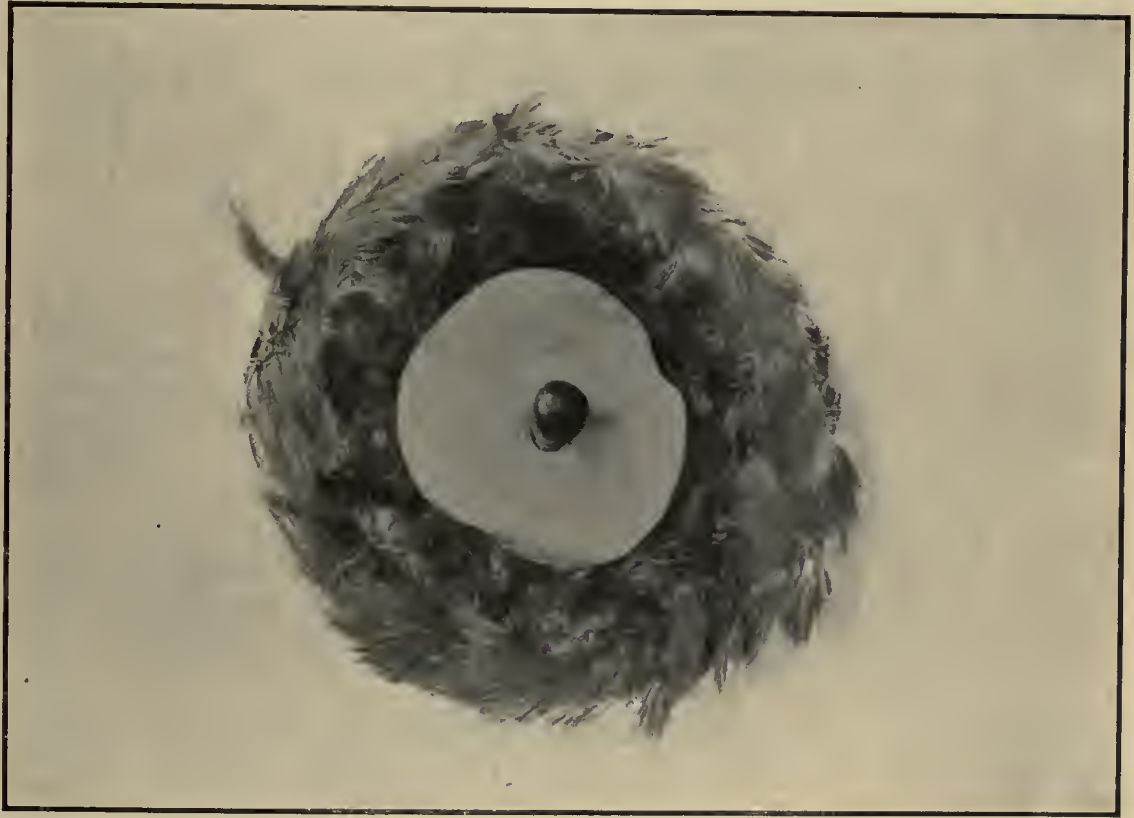

FIG. 4. EYE OF WICKER WORK WITH SHELL AND FEATHERS.

Little can be added to Mr. Gill's account, but I may call attention to the elongated neck and the fact that the descendants of the makers of this image in after years called the ladies of the American Mission, certainly not respectfully, *aiooe*, long-necked. In matters of worship consistency is generally *de trop*.

In the human hair of the Pitt-Rivers specimen at Oxford we may note a resemblance to one in the British Museum (shown in Fig. 26, p. 34); but the present specimen

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[1] *Certhia vestiaria = Vestiaria coccinea, C. obscura = Hemignathus obscurus.*

(Fig. 3) which may be numbered 11 in the list of Kukailimoku, has plain shell eyes devoid of wooden pupil, which give the head a very peculiar expression. Once covered with red feathers this specimen is now bare: the neck is large but not very long. No history is attached to this very interesting head.

I am somewhat puzzled at the considerable number of Kukailimoku in existence (eleven), omitting all reckoning of those that may have been hidden in caves, where if not destroyed by time they are at all events unknown, as it was regarded as the private deity of Kamehameha I.; and hitherto I have not been able to learn from Hawaiians whether members of the Moi's family or household, or his highest chiefs would be likely to have replicas of the god's image. Certainly all those images attributed to Cook or Vancouver, if their history be so far correct, were in existence before Kamehameha made Kukailimoku the state god,[2] and may have been given to the voyagers before the full apotheosis of the war god. It is unfortunate that so little history remains, and there is no chance of any important additions to our knowledge of this image from native sources. All the questions that naturally arise must remain unanswered. It may be recalled that at the death of his foster father Kalaniopuu (1782), the young Kamehameha was left as Pontifex maximus of the gods of Hawaii, an office he had filled from early youth. It was not Kukailimoku alone that was entrusted to his care, but all the gods and their maintenance devolved upon him.

Besides the Kukailimoku other and more gigantic images were constructed with wicker work in whole or in part, and Rev. S. E. Bishop, D.D., of the American Mission, has told me that he remembered such in his childhood at Kailua, on the west coast of Hawaii. This ancient place was the residence of many Moi, and here Kamehameha died. The wicker heads were generally covered with kapa (bark cloth), often decorated with feathers, and the eyes were formed of shell as in the portable images we have been considering. One such eye decorated with feathers is shown in Fig. 4, of which the photograph was sent to me by Miller Christy, Esq., of London, who gives the following account of it:

> "My friend Mr. James Backhouse, of the Nurseries, York, possesses one of these eyes which has a very interesting history. It was brought home by Captain Cook and given by his widow to a certain Ann Gates of Doncaster in Yorkshire. It next passed into the hands of a certain Ann Smith, who gave it about the year 1814 or 1815 to Jane Backhouse, of York, the grandmother or great-grandmother of my friend. Of this eye I send you a photograph which Mr. Backhouse has kindly had taken for me. The diameter of the eye is about six inches. The outermost feathers are yellow and the innermost red. They are fastened on to a net base which is stretched on a frame of wickerwork. The central piece is mother-of-pearl with a wooden button or pin in the centre. I fancy it must have been the existence of these objects in Mr. Backhouse's museum which gave rise to the report that a feather cloak was preserved in York. Neither Mr. Backhouse nor myself knows anything of a cloak preserved there."

In the British Museum are a number of wicker disks of about the size of this specimen, of which the use was uncertain until Mr. Christy brought forward this eye, and now their purpose seems settled. No net nor feathers are about any of them, but their size and shape closely resemble the specimen figured. The late king Kalakaua told me he had seen two huge images with wicker heads in a legendary cave at Kealakekua. It was within two miles of this reputed cave that the Kukailimoku in this Museum (Fig. 22, *ante*) was concealed after the abolition of the ancient cult by Liholiho.

---

[2] It had, according to Fornander, been a chosen deity of a long line of Moi of Hawaii, from Liloa to Kalaniopuu.

Mahiole.—Our additions to the list of helmets are considerable and interesting. Of the unfeathered variety an authentic specimen has come to this Museum since the publication of the former paper. It was obtained many years ago by the Reverend W. P. Alexander, of the American Mission, when stationed at Wailuku, Maui. He saw it on the head of a native and secured it on the spot, and gave it as an interesting relic to Oahu College. From the cabinet of this institution it was given by the Trustees to the Bishop Museum. It is very well made but quite thin and unfit for the usual purposes of a helmet. (Fig. 5.) I believe it was ornamental simply, and from the number of this class extant cannot have been a very exclusive badge of chieftainship. In one of the French voyages a plate represents two chiefs with similar helmets directing an execution.[3] The basket work of this head piece is so well made that I shall take occasion to again refer to it in the chapter on Mats and Baskets of the Hawaiians. In continuation of the list on page 48 this mahiole should be numbered 42.

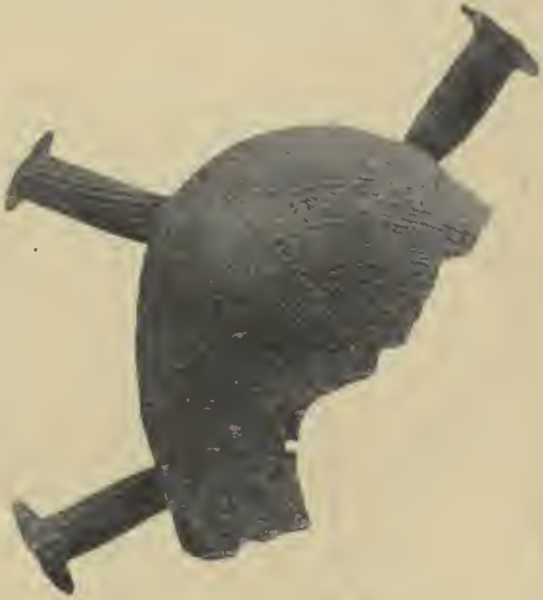

FIG. 5. HELMET FROM MAUI.

43. The interesting history of the mahiole in the museum of the Natural History Society at Newcastle-upon-Tyne has been given with that of the Kukailimoku of the same collection. This helmet is covered with red feathers except on the yellow crest and the bands of black radiating from the crown. The red has hardly faded, but the crest has lost much of its original color on the surface, while underneath the feathers are still bright orange yellow. The length from A to B direct is 13 inches; A to B along the crest, 27.5 inches; and from C to D 10.5 inches. A color scheme is given in Fig. 7.

44. A very good specimen is in the Oxford Museum, of which my friend Professor Balfour has kindly sent me a photograph (Fig. 8). It is remarkably well shaped, still covered with a network of oloná, but the feathers have gone. Probably it was red with a yellow crest. It was in the Pitt-Rivers collection and without special history.

45. In the Castle Museum, Norwich, England, are two rather dilapidated mahiole which have been in that museum over fifty years; and the Curator, James

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[3] *Narrative of a Voyage round the World.* Capt. Freycinet. Letters by J. Arago. London, 1823. Part II., p. 137, Letter CXXVI.

Reeve, Esq., has kindly sent me photographs which are reproduced on Plate LXVI. There are feathers enough to show that they were originally covered with red *iiwi* attached to the usual network of oloná.

46. With the above and quite similar, as shown in Plate LXVI.

I may now return to the mahiole enumerated in the former paper, of which I have obtained more information. And first, No. 12 on page 44, the specimen brought home by Wäber of Berne, and now in the museum of that city, I am able to figure by the kindness of Dr. von Fellenberg, the Curator,[4] who has sent me a water-color drawing of this and the cloak which will be mentioned later. It is well modelled, red, with yellow crest, and in good order.

On page 48 of the former paper (this volume) four helmets were catalogued as Numbers 38–41. These were formerly in the Boston Museum, where they had been so many years that their history was lost, and at the time of the publication of my original paper had recently been given to the Peabody Museum of American Archæology at Cambridge, Mass. I have since seen them, and from Mr. C. C. Willoughby's photographs, kindly sent me, can add the following descriptions:

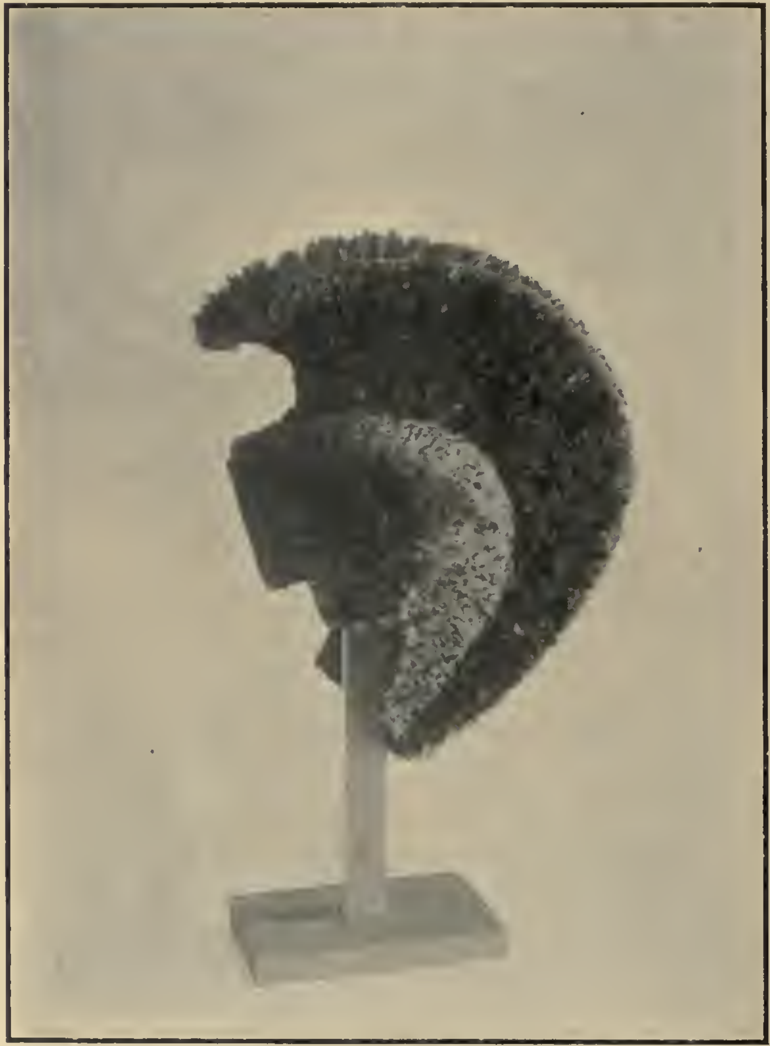

FIG. 6. MAHIOLE AT NEWCASTLE-UPON-TYNE.

38. One of the knobbed variety, featherless, and closely resembling the example in the Berlin Museum shown in Fig. 37, p. 44. The most marked difference is in the shape of the ear notch which is less generous and opens up and forward. It is in better preservation than the one in Germany. The length along the front from knob to knob top is one foot.

39. Another one without either feathers or net is almost a duplicate of one in the Vancouver collection of the British Museum, and shown in Fig. 40, *b*. This seems

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[4] Dr. Edmund von Fellenberg died May 10, 1902, aged eighty-five years. Not the Berne Museum alone, but all who have met this distinguished and amiable man will mourn his loss.

a little smaller than the Vancouver specimen (15.5 inches from base to tip), but the measurements may have been taken in a different manner. The angular ear notch is the same, and the number and arrangement of the radiating arms is duplicated. It seems as if one skilful workman made both of these mahiole.

40. One of the four is covered with feathers and is a most interesting specimen. In general shape it resembles the last, but has six instead of five arms. It is 19 inches from base to tip (A–B), and as shown in the color diagram, Fig. 10, I., has a red body or cup fringed on the front edge with interrupted black lines; three arms are yellow and three red, and the crest is red beneath, yellow above. In this, as in some others, the two methods of attaching the feathers are used. The rays and crest are covered with feather-bearing network, while the cup is composed of rods to which feathers are bound, a structure more solid and useful as a helmet.

COLOR SCHEME.

41. In the same figure No. II. shows a helmet of the more common shape, 15 inches from A to B, and covered with red, black and yellow feathers. Certainly this collection shows some of the most interesting forms of the Hawaiian feather helmets, and the close religious and commercial connection of Boston with the Hawaiian Kingdom explains the presence of such good specimens.

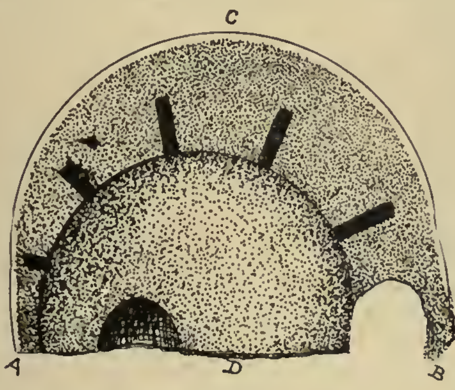

FIG. 7.

It is unfortunate that there are no specimens extant of the helmets of the southern groups. The fanatical revulsion from paganism caused the voluntary destruction of these as well as the idols, and if any were preserved by stealth, as I have information that the idols were in some cases, time has probably destroyed the more delicate fabric. At the marriage of Aimata and Pomare in Tahiti, in 1821, Reverend William Ellis writes that "The two principal *Raatiras* were distinguished by their ancient helmets, superbly covered with red feathers, and surmounted with the tails of tropic-birds."[5] The conical cap of the Easter Islanders, covered with feathers of the barnyard fowl, is perhaps the degenerate remains of a feather helmet.

Marquesan Head Dress.—The Bishop Museum has just received from our collector, Mr. Alvin Seale, who has been for the past year in the southeast Pacific, a very interesting feather head dress, *Pae kua*, obtained from an old chief at Nukuhiva, the principal island of the Marquesas. It is a broad band of lenticular outline composed of the fibrous sheath of the leaf of the coco palm bound with a neat braid of Pandanus. The feathers are attached in a peculiar way by long fibres fastened vertically to the long axis of the band. As there is no net or any very firm substratum to fasten the feathers to, the method used by the Hawaiians could not be followed. Most of the feathers are green, but the red ones of the outer row, and of seattered patterns elsewhere, are from the now extinct *Kua*, a bird closely resembling the Hawaiian iiwi. While devoid of the graceful and attractive form of the mahiole this head band must have given some dignity to the tatued face beneath. The length is 18.5 inches; the width 8.2 inches. The red color is nearly that of the apapane so much used on Hawaii. I have every reason to believe this bit of Marquesan feather work very old, but the border is certainly recent. Fig. 11.

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[5] Letter quoted in *Tyerman and Bennet*, ii., 137.

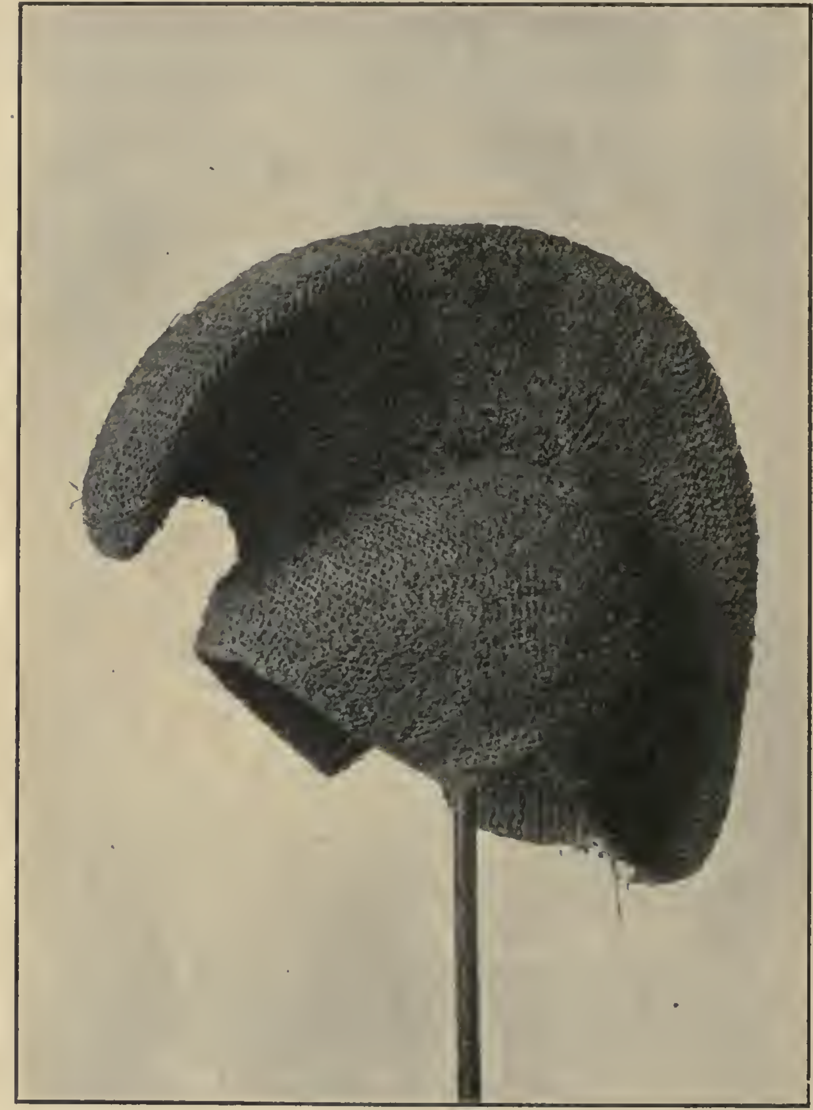

FIG. 8. MAHIOLE AT OXFORD.

No additional information has been obtained of the Hawaiian feather *malo*, mentioned in the previous paper, but it certainly had none of the interest that a similar garment possessed among the southern Polynesians. At Raiatea, "When a new king was consecrated, by ceremonies too filthy to be detailed,[6] he was invested with the *maro* or hereditary robe of royalty, of network covered with red feathers, and to which an additional lappet is annexed at the accession of each sovereign. This splendid train, which was wont to be wound about the body, and flowed upon the ground, is 21 feet in length, and six inches broad. The needle by which the fabric is wrought is still attached to it, and according to report no stitch could be taken with it but thunder was forthwith heard in the heavens. The symbolical marks which are apparent on the plumage and texture indicate that many hundreds of human victims have been sacrificed during its gradual making and extension, when the sundry monarchs by whom it has been worn in succession, wrapped themselves with its folds as their insignia of authority.... Tamatoa has cast off this relic of idolatry and sent it as another trophy of the gospel victories here, to the museum of the London Missionary Society."[7]

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[6] It is a missionary who is writing, and it is probable that the ceremonies of this function were most interesting from an ethnological point of view.

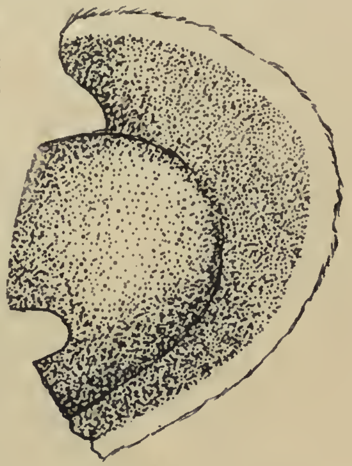

FIG. 9. MAHIOLE AT BERNE.

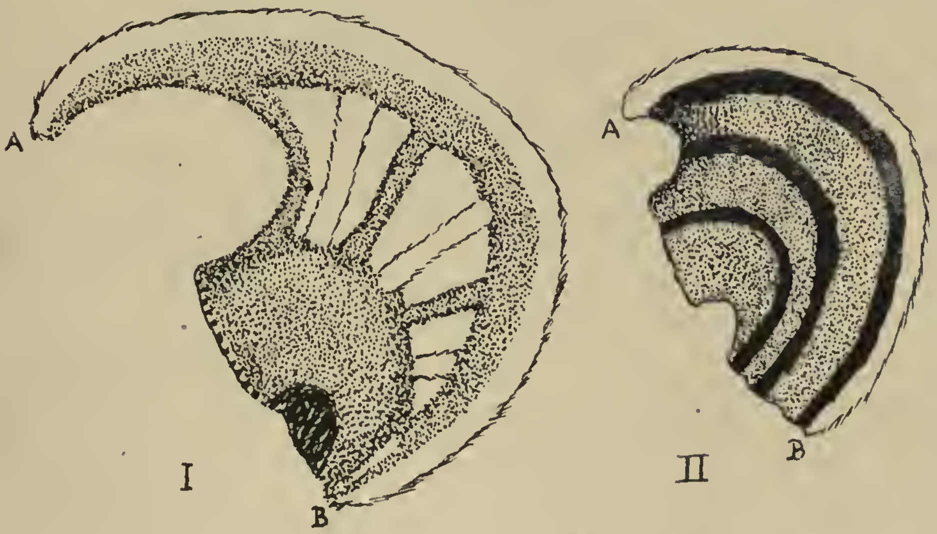

FIG. 10. HELMETS IN THE PEABODY MUSEUM.

Ahuula.—Before describing the additional ahuula there are several corrections to be made in the former list. Of the cloak numbered 22 (Fig. 66, p. 63) I am able, by the kindness of Dr. von Fellenberg, who has sent me a water-color sketch, to present a more accurate diagram (Fig. 12) than the one on page 63. To No. 76 (Fig. 104, p. 77) should be added the following measurements: width at neck, 2 feet 7 inches; round the bottom, 9 feet 1 inch; length of side, 4 feet; total length, 4 feet, 3 inches. No. 90 (Fig. 112, p. 79) was wrongly attributed to the British Museum: it belongs to J. Edge-Partington, Esq. The mistake arose from the inclusion of a drawing of this in a parcel containing those of the Museum specimens. Nos. 92 and 93 are now in the Dresden Museum, Dr. A. B. Meyer writes me. Of No. 94 I am now able to add an illustration (Plate LXVII., lower figure.) and the following particulars: It has a neck border of red and yellow feathers, while the rest is covered with long black feathers (*Fregata aquila?*). The front edge is 8.5 inches long, and the total length 17 inches. No. 96 is now rotting in the royal mausoleum in Nuuanu Valley. No. 98 must probably be cancelled, for I am assured by residents of York that they have never heard of any feather cape there. No. 100 should be corrected to St. Augustine College, Canterbury. The abbreviation Cant. being common to Cantabrigæ and Canterbury led to the error. I have written to this Theological College, but have received no answer, so can add nothing to the statement on page 81. The additions to be added to the list are the following:

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[7] Tyerman and Bennet, from whose narrative this is quoted (ii., 125), unfortunately were by no means trustworthy in all respects, if their account of matters and customs at the Hawaiian Islands are any criterion. Like the Hawaiian malo this has disappeared. All the ethnological specimens of the Society were deposited in the British Museum, but my friend J. Edge-Partington has been unable to find any traces of it in that Museum.

101. This is one of the ahuula from the Boston Museum now in the Peabody Museum of American Archæology in Cambridge. Although in a sad state of dilapidation the elaborate pattern can be easily made out. It is 29 inches long. Fig. 13.

102. At Newcastle-upon-Tyne, with the specimens of feather work already described (page 6) is a cape in excellent preservation, shown in Fig. 14. It is of the usual red and yellow feathers. The front edges measure 9.5 inches; the depth is 14 inches, and the bottom is 63.5 inches round. In the Transactions of the Natural History Society of Newcastle, ii., list of donations, 1834-5, we read: "Feather Cloak and Helmet and a collection of Native Curiosities from the Sandwich Islands; Mr. William Row." Note the resemblance to the pattern of the capes shown in Figs. 56 and 59.

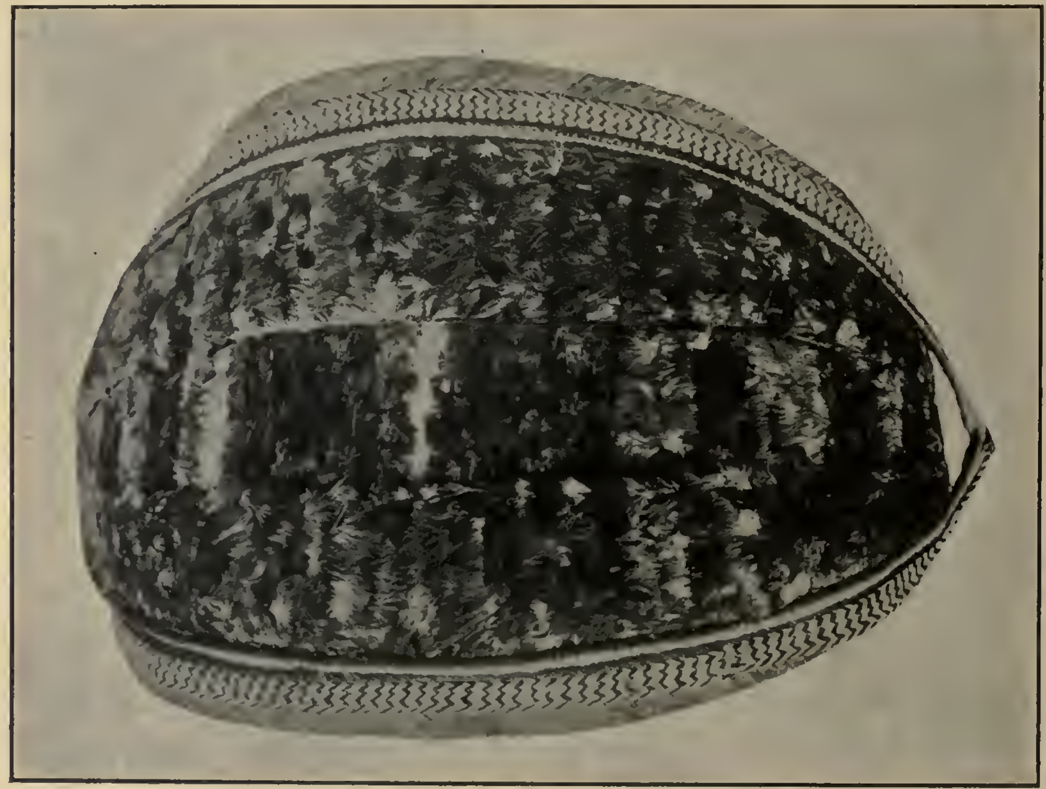

FIG. 11. MARQUESAN HEAD DRESS.

103. A very pretty and well preserved cape belongs to Miss Mary Clark of Hartford, Conn. The front edges measure 9 inches; the extreme width is 32 inches, and the length 14.5 inches. It is very well shown in Plate LXVIII. The feathers are oo and iiwi. It probably left the Hawaiian Kingdom during the reign of Kamehameha III.

104. A cloak in the cabinet of the Literary and Philosophical Society of Perth, Scotland. I am only informed that it is in bad condition, and is partly covered with green feathers.

105. A cape, unusual both in shape and design, belonging to J. Edge-Partington, Esq. (Fig. 15.) It is of oo and iiwi feathers, 17 inches long, 27 inches at the neck, 12 inches in front, and about 5 feet around the bottom.

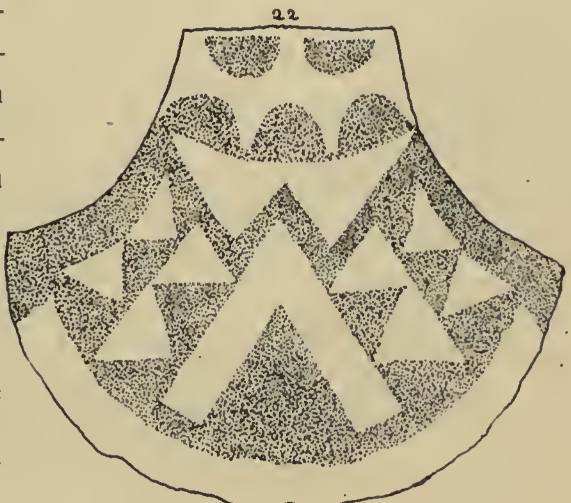

FIG. 12. CLOAK AT BERNE.

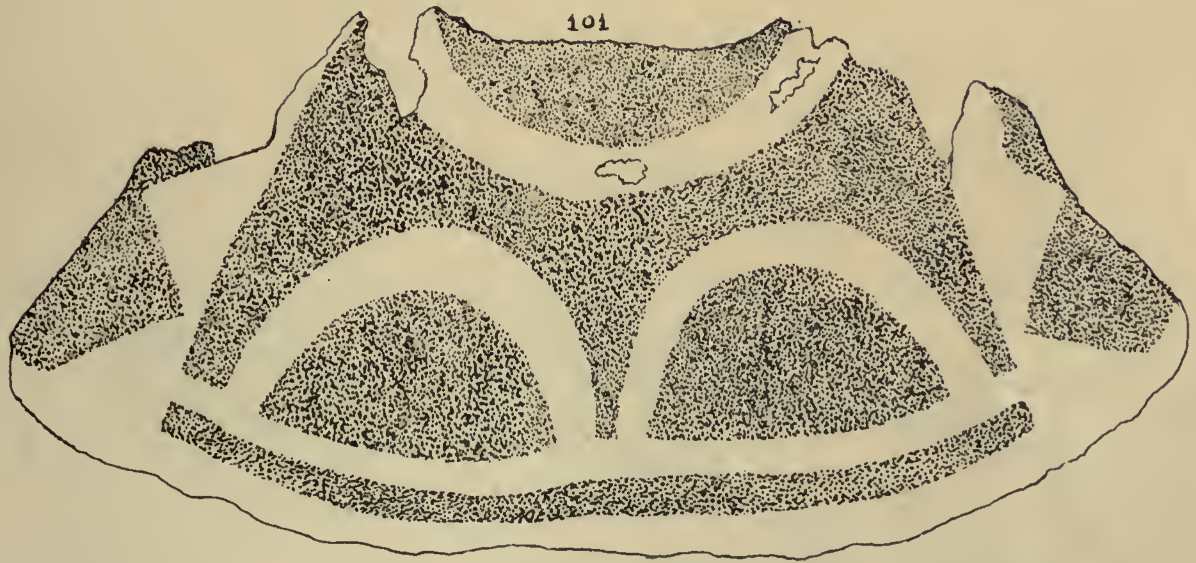

FIG. 13. CAPE AT CAMBRIDGE, MASS.

106. A cloak said to have been destroyed in the conflagration caused accidentally in the attempt of the Board of Health to stamp out the bubonic plague in the Chinese quarter of Honolulu. At the time when the claims for losses caused by this great fire were presented to the Commission appointed for the purpose, my assistant, Mr. Allen M. Walcott, obtained from the claimant, Peleioholani, a carpenter by trade, the following particulars: The cloak was called "Ehenkani" and was made in the time of Keeaumoku (the father of Kaahumanu) and finished shortly before the battle of Mokuohai (July, 1782) between Kamehameha and Kiwalaó. Keeaumoku's wife gave it to Peleioholani's grandmother. Principally mamo[8] feathers with a small crescent of red iiwi in each upper corner; between the shoulders a round spot of black oo feathers, from which a line of red iiwi led down to a trifle below the middle of the cloak. The cords at the neck were of human hair, an unusual thing. It must be remembered that

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[8] Probably oo, for a genuine mamo ahuula was devoid of any adulteration by other colored feathers. It should be stated that Peleioholani's claim to be the owner of this cloak was disputed and it was said to have been taken from the palace years ago; but from what I have seen of the observation of natives whose duty it was to care for the royal robes, I do not believe one of them could describe the pattern of the cloaks he or she had seen for years.

the design (Fig. 16) as well as the following measurements are from the description given to Mr. Walcott by Peleioholani and are of course only approximate. They are worth recording as differing from any robes described. Length, about 4 feet 9 inches; neck measurement about 2 feet; circumference at bottom about 5 feet 8 inches. It is a matter of tradition that 27,000 birds were captured to furnish the feathers for this cloak. In the left side were seven spear holes that were never patched, and about which were blood stains. Keeaumoku was severely wounded in this battle, and it was rather a fancy with the old chiefs to retain the honorable scars in the ahuula, as in the cloak given by Kamehameha to Vancouver to be taken to England for King George.

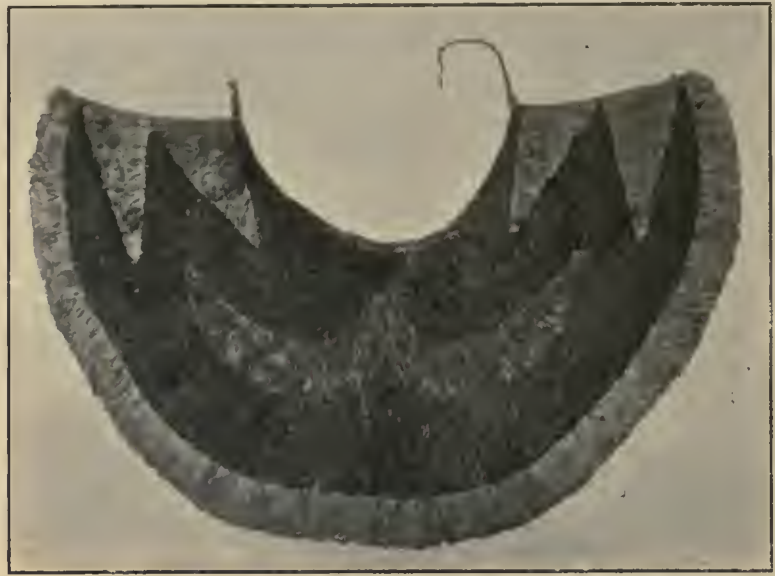

FIG. 14. CAPE AT NEWCASTLE-UPON-TYNE.

107. An interesting cloak is in the Museum at Dover, England. It was given to this museum by General William Miller, well known in Hawaiian history as a British representative at Honolulu. The cloak was probably given to him by Kamehameha III., who did much to scatter the ahuula which had been accumulated by his victorious father, who apparently swept the island of Hawaii clean of these royal robes. This cloak is 5 feet 9 inches long; 2 feet 8 inches across the upper part; 8 feet 3 inches across the lower part, and 10 feet 7 inches round the bottom. The pattern in oo and iiwi feathers is not unusual, and the robe seems in good preservation. I purchased

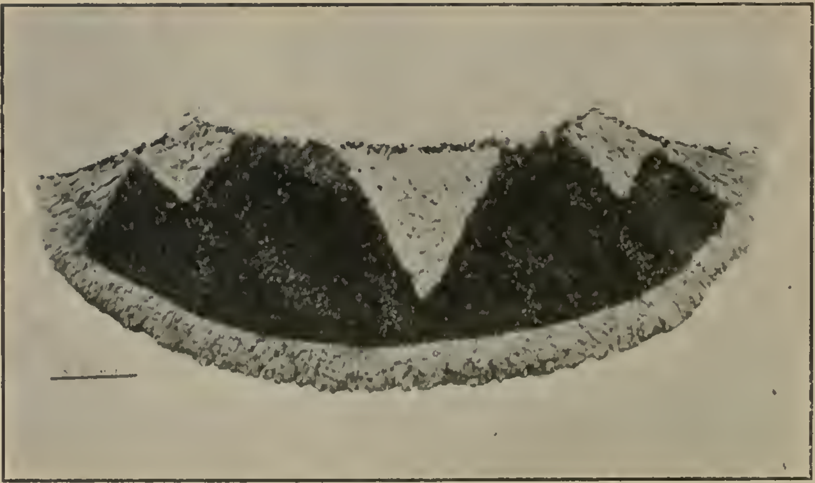

FIG. 15. EDGE-PARTINGTON CAPE.

a photograph of the specimen, but it proved unsuited for reproduction, and must be represented by the color diagram Fig. 17.

108. There is a small cape in Keene, New Hampshire, owned by Henry S. Mackintosh. Its dimensions are approximately: around bottom, 64 inches; around neck, 17 inches; across front, 26 inches. Although the owner wishes to dispose of it he has failed to respond to my request for a photograph.

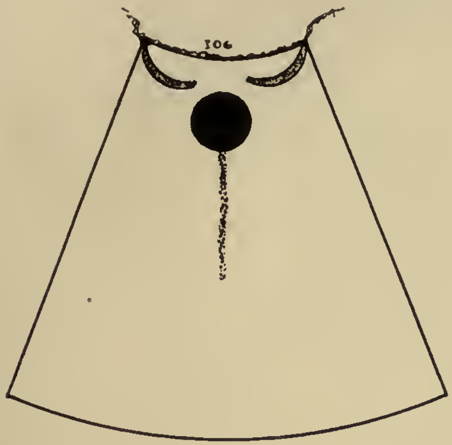

FIG. 16.

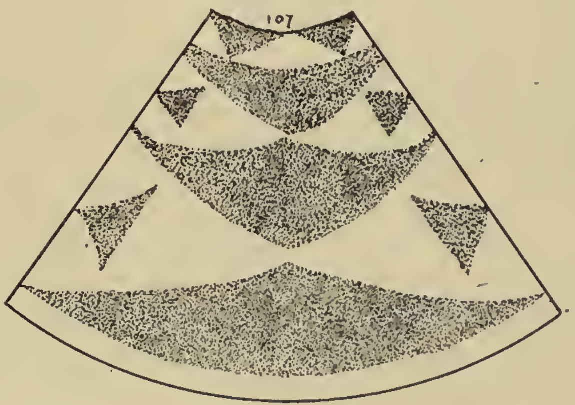

FIG. 17.

109. Another of the Kamehameha capes was brought to my attention by the authorities of the United States National Museum. It was given by Kauikeaouli to the father of the present owner. It is of oo with slight red and black ornamentation, as shown in the color diagram. (Fig. 18.) It is 26 inches across, and 64 inches around the bottom. It will be seen that it is exactly the same size as the preceding cape, and as I have seen neither, nor do I know the name of the person offering this to the National Museum, there is a possibility that the two notes refer to the same cape.

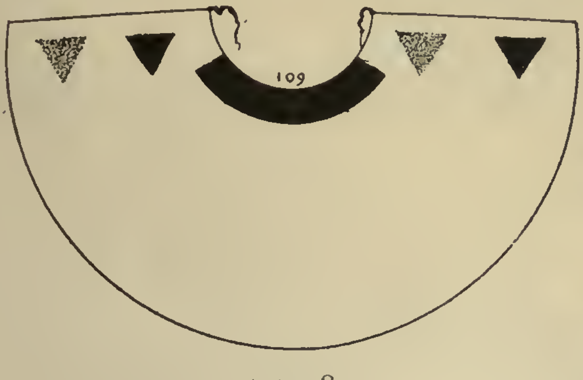

FIG. 18.

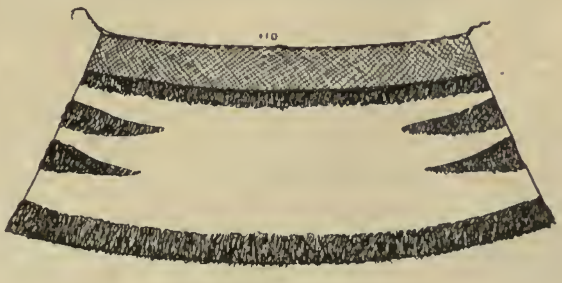

FIG. 19.

110. In the Norwich Castle Museum, of which J. Reeve, Esq., is Curator, are two capes which had not come to my notice, as one was attributed to Tahiti and the other to New Zealand. Mr. Edge-Partington corrected the mistakes, and besides send-

ing me the measurements requested the Curator to send photographs, which he kindly did, and the results are shown in the figures. The first cape in this collection, once attributed to the Maori, is small, 14 inches deep; 29.5 inches wide at the upper end, and 41 inches at the bottom. (Fig. 19.) It is covered mainly with the pure white feathers of the Tropic bird, with ornamentation of black, probably the feathers of the Man-of-war hawk. The net at the upper part is wholly bare of feathers. It is quite like the cape No. 70, page 76, in the Hofmuseum at Vienna, and seems to be made of similar feathers.

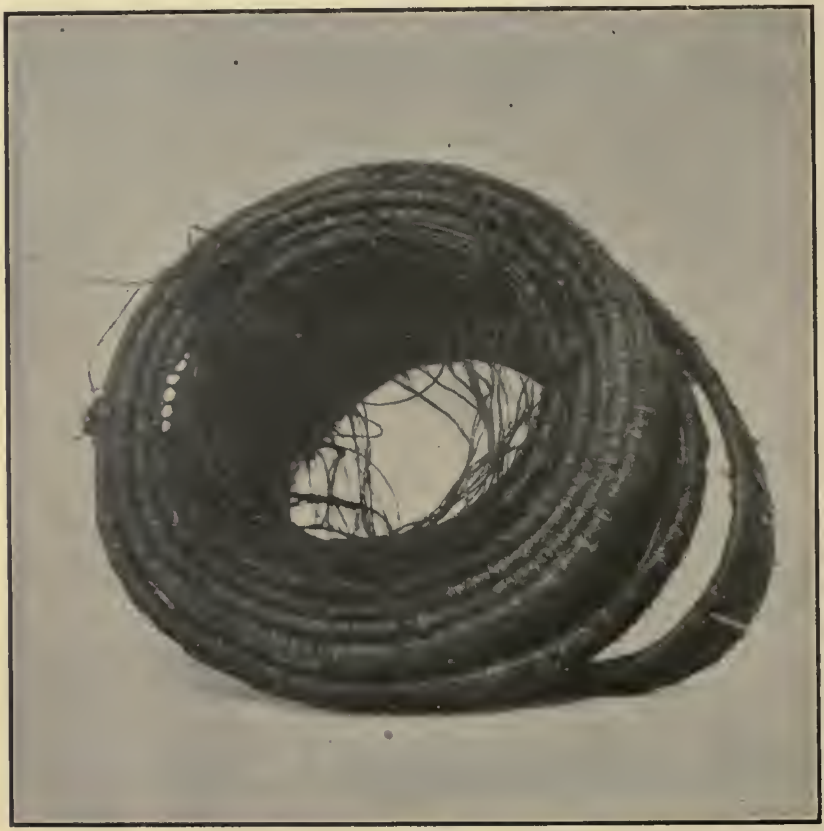

FIG. 20. COIL OF FEATHER MONEY.

111. The other cape is in a sadly dilapidated condition, although it will be seen that the net is still entire, and enough feathers of the iiwi remain to show that it once was entirely red. It is 13 inches long; 29.5 inches in its widest extent; 17 inches across the neck, and 8.5 down the front. The edge of the neck had some yellow feathers, but not enough remain to determine the pattern. Plate LXVII., upper figure.

Feather Money.—I have spoken of the feather currency of the Hawaiians and Samoans, which consisted merely of a bunch of feathers of some red bird, or on the former group preferably yellow. But there was (and still is to some extent) on Santa Cruz, in the western Pacific, a more developed coinage, more peculiar than the huge stone disks of the Caroline Islanders that represent money. Mr. R. Etheridge, Jr., the distinguished Curator of the Australian Museum, has published in the Records of that museum (Vol. IV., No. 7, August, 1902) a very interesting account of a specimen lately acquired, and as the curious currency seems rare in collections I have thought it might be of interest to describe a coil in this museum which came some years ago labelled "War Belt." In the note below I give various references to published information on the matter.[9] Plate LXIX. shows the unrolled coil of this currency, of which the length of the feathered part is 23 feet, its width 1.2 inches. Between the band and the wooden hoops that it is coiled upon when rolled up (Fig. 20) there are cords of twisted fibre respectively 28.5 and 26 inches. The band is composed of longitudinal vegetable fibres wrapped around with similar fibre, to which the red feathers of a common lory (*Trichoglossus massena* Bonaparte) are glued by some tar-like substance. On the edges near the ends are seeds of *Coix lachryma*, but none of the other ornaments mentioned by Etheridge.

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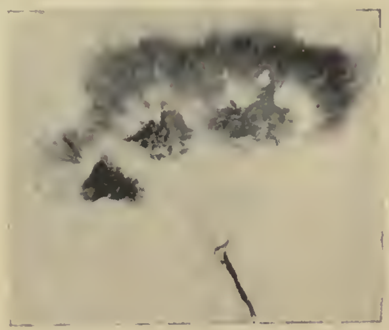
[9] Edge-Partington *Album*, I., Pl. 165, figures a coil without the interior support. Codrington, *The Melanesians*, 1891, p. 324, gives perhaps the earliest account of its use. Schmeltz, *Internat. Archiv. Ethnographie*, VI., 1893, p. 57, refers to Santa Cruz feather money. Jennings, *Notes on an Ethnological Collection from Santa Cruz, Journ. Anthrop. Inst.*, I., n. s., Pl. 64. Temple, *Beginnings of Currency*, Ibid, II., n. s., p. 99. Etheridge, *The Tavau, or Coil Feather Currency of Santa Cruz Island, Records Aust. Mus.*, IV., p. 289.



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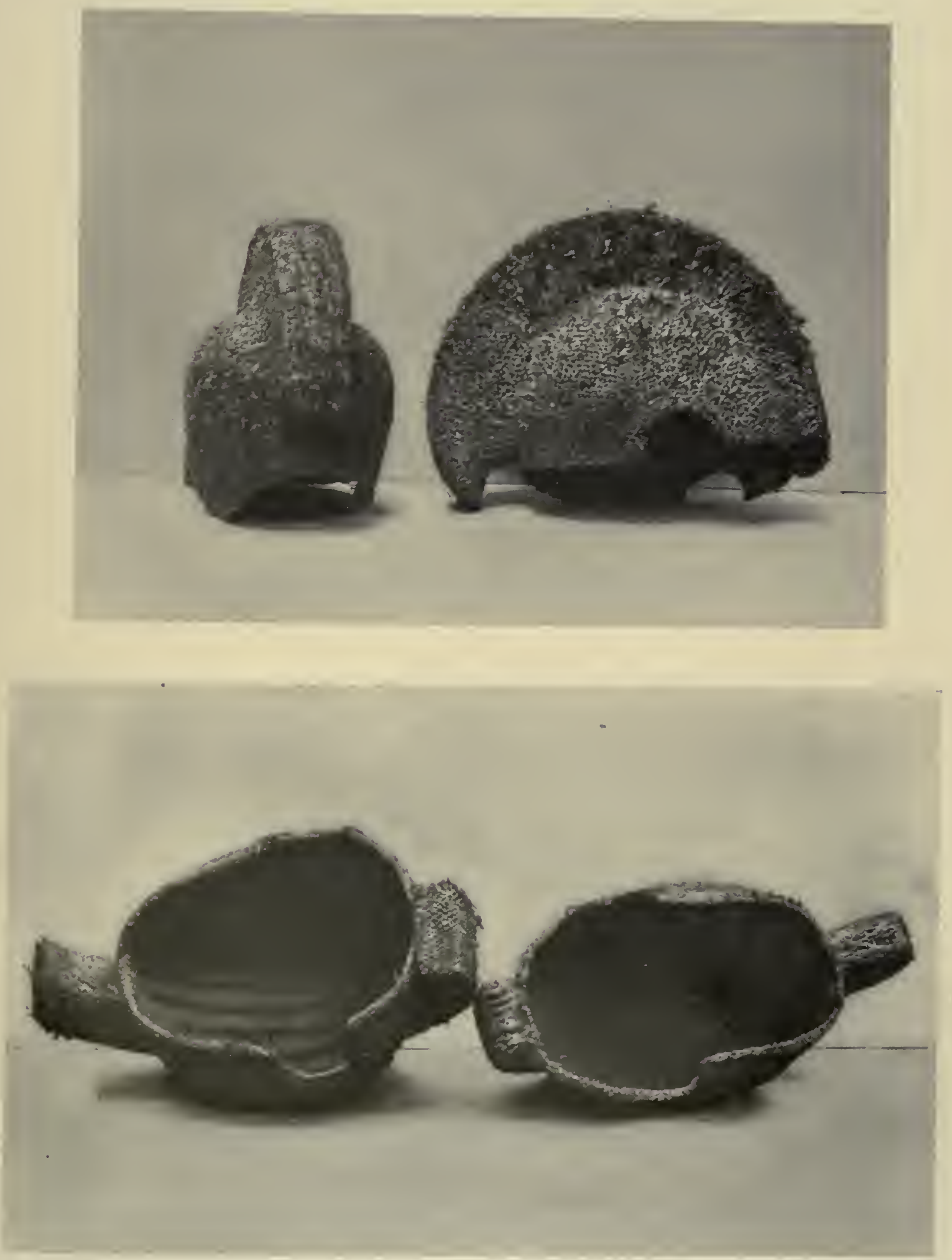
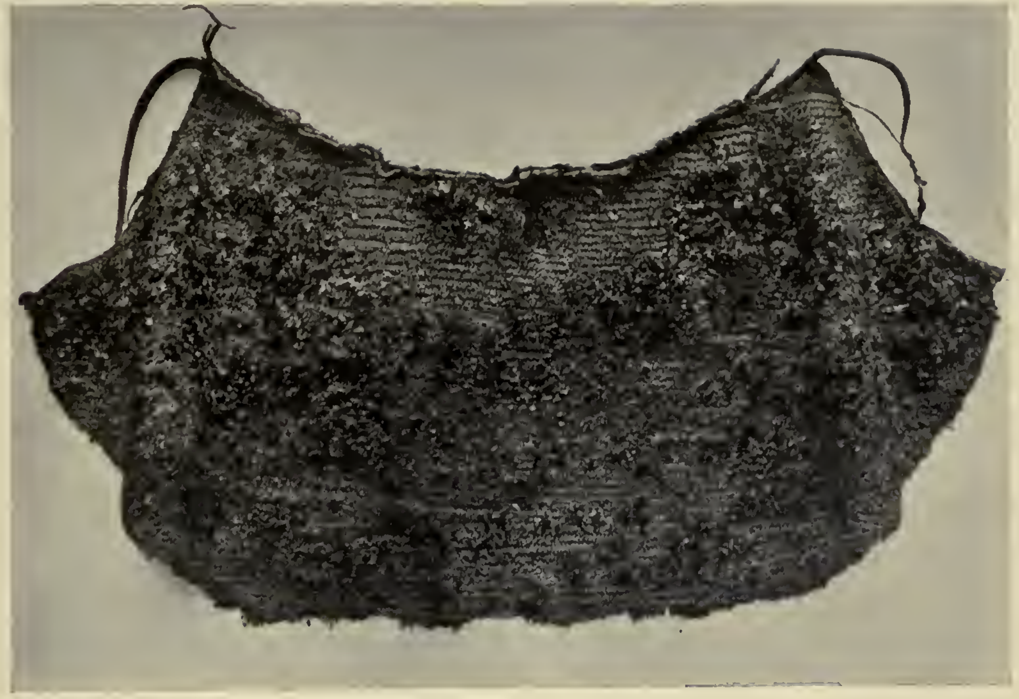
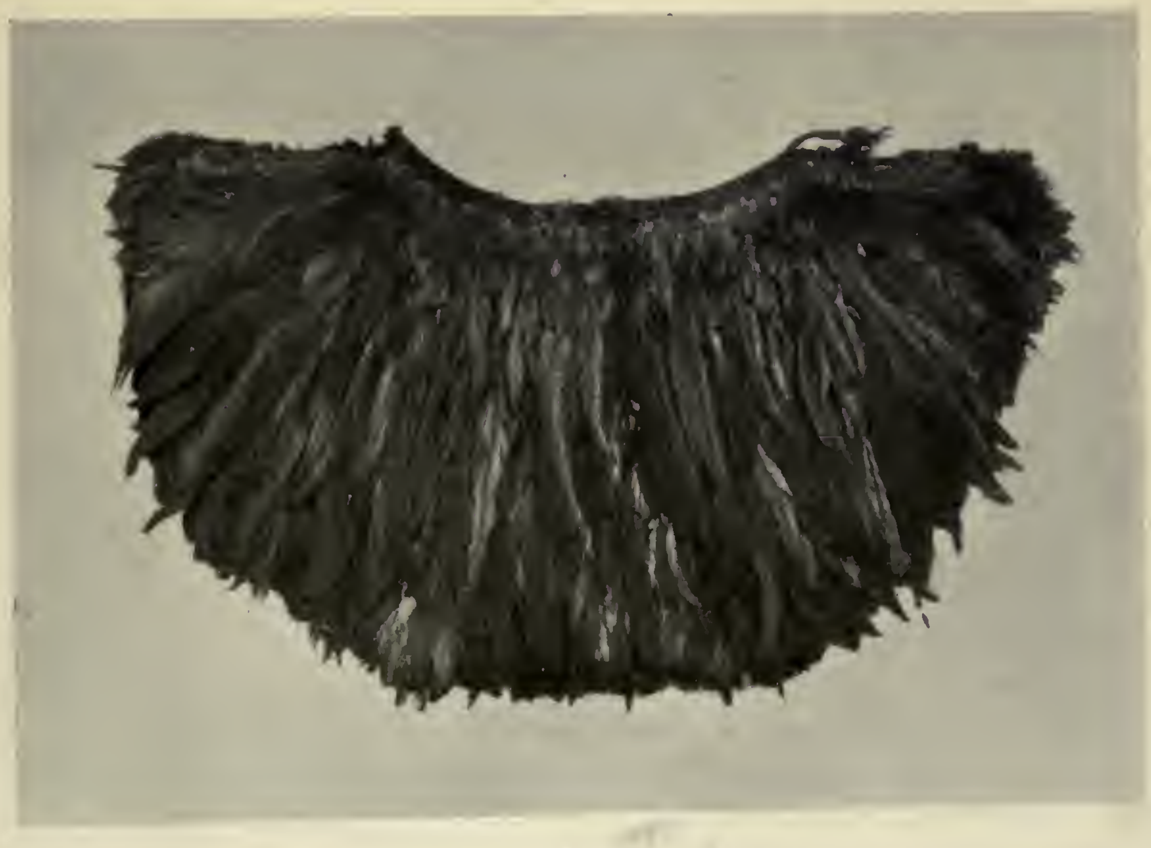


HELMETS AT CASTLE MUSEUM, NORWICH, ENGLAND.

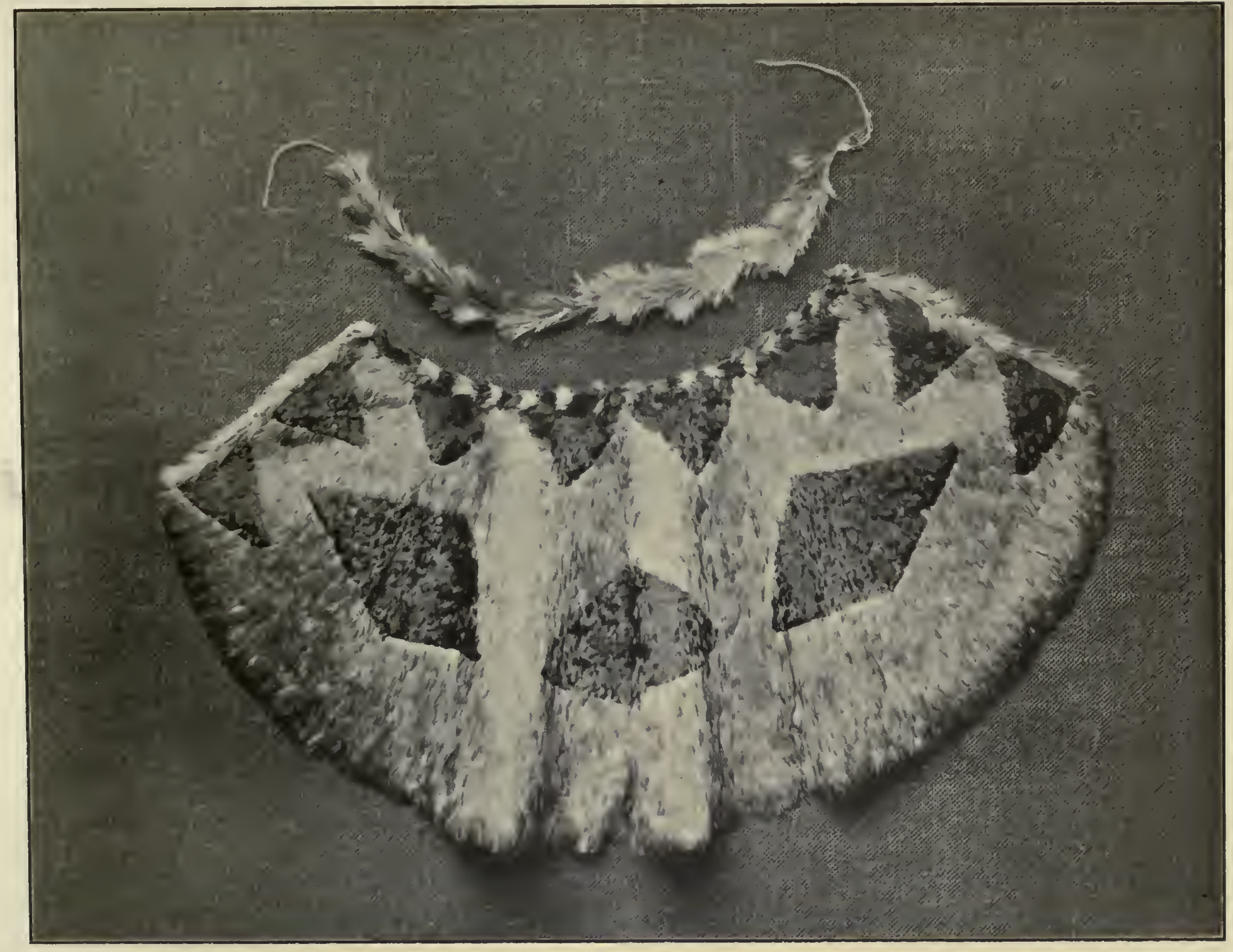
Plates LXVI – LXIX following page 454



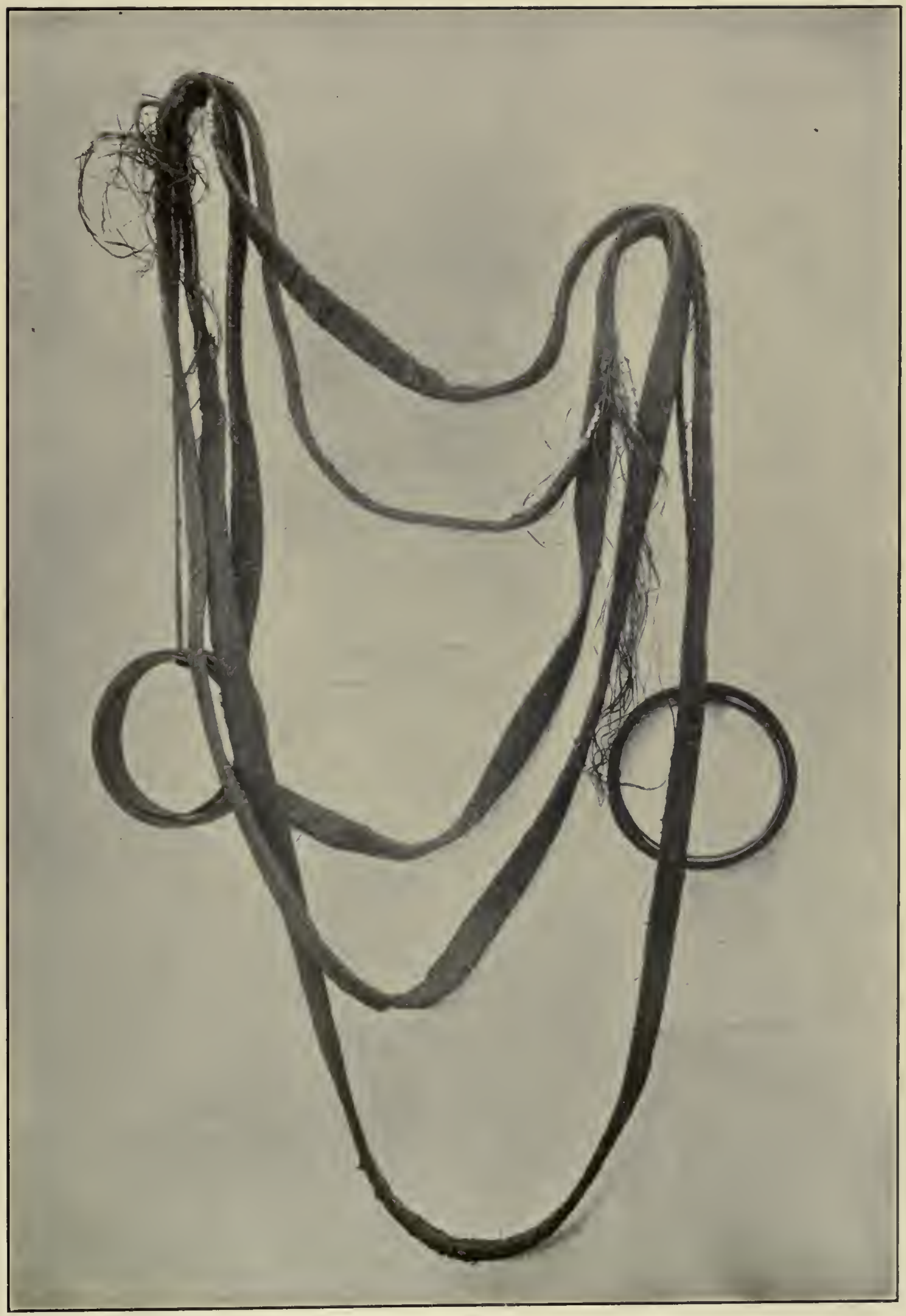
CAPE AT NORWICH, ENGLAND.



CAPE AT CAMBRIDGE, MASS.



CLARK FEATHER CAPE.



SANTA CRUZ COIL MONEY.

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